



**MARKET ASSESSMENT OF
POTENTIALS FOR BUSINESS MIX/LIGHT INDUSTRIAL USES
WEST OAKLAND SPECIFIC PLAN**

Prepared for
CITY OF OAKLAND

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INTRODUCTION AND PURPOSE

This report considers market potentials for development and expansion of business activities and job opportunities in West Oakland, focusing on potentials for land uses and commercial/industrial development in the areas designated for business activity and employment in the Oakland General Plan. Those West Oakland areas, designated for “Business Mix” and “Light Industrial” uses, are concentrated in two of the WOSP Opportunity Areas:

- The Mandela/West Grand Opportunity Area 1; and
- The 3rd Street Opportunity Area 3.

These two opportunity areas are primarily older, industrial areas. While many industrial properties remain actively used, others are underutilized and/or include older facilities that no longer meet current standards and market conditions. In addition, the relocation of the I-880 freeway further to the west has affected land use potentials in the area. While large parts of the Mandela/West Grand Opportunity Area historically were in general industrial and transportation use, the relocation of the freeway further to the west has created a new boundary between the heavier industrial uses (now desired outside the freeway) and a mix of lighter industrial and other business uses desired within West Oakland.

There is interest in attracting new types of industries in light industrial, R&D, and business park/campus developments as well as through reuse of existing buildings. Examples could include custom and advanced manufacturing, clean/green industries, life sciences/biotechnology businesses as well as companies involved in information technology and digital media. There are examples of businesses in these industries already located in parts of West Oakland. However, there are questions of how West Oakland could attract more of the newer types of businesses that have located in nearby Emeryville, Alameda, and West Berkeley. There also is interest in attracting more traditional, custom manufacturing and construction uses that are growing and that could provide a broader range of business and job opportunities in the area.

This report summarizes the market analysis undertaken to identify and assess potentials for business growth and associated new development in West Oakland. Focused market assessments were undertaken, specific to market sectors and building product types that could be options for West Oakland opportunity areas and sites currently in industrial use. For potential uses/industries, the assessments considered the strength of demand, conditions needed to attract new uses, the competition and important location criteria, and supportable building product types including reuse of existing buildings.

This analysis does not address retail or eating and drinking uses or the arts, as those uses are being addressed in a companion analysis by the Conley Consulting Group (addressing potentials for residential, retail, and the arts).

The assessment of potential industries and development options for West Oakland draws from the larger market context of the East Bay, central Bay Area, and surrounding region. Information and data come largely from available sources including other relevant studies and forecasts.

The assessment also draws from the context of business activities and industries currently located in West Oakland, particularly those that located there more recently. A separate report was prepared to summarize the context of existing land use and business activity in West Oakland. It is included in Appendix 2, at the end of this report.

The next section of the report summarizes key aspects of the larger market context. It is followed by the assessments for market sectors that could offer potentials for West Oakland. Then, a later section identifies parameters for the Specific Plan alternatives and addresses aspects of the strategy needed for capturing market potentials and attracting new uses, business activity, and jobs to West Oakland. The last section identifies and describes the types of jobs supported by each of the market sectors.

THE LARGER ECONOMIC MARKET CONTEXT

Trends driving the economy of the East Bay and Bay Area region provide the larger market context for considering opportunities in West Oakland. The following summarize relevant aspects of that context.

- ◆ ***Recession Has Taken a Toll.*** The economic recession has taken a toll on the region's economy, and it will take time to recover. Recent analysis indicates that it could take until 2015/16 before business activity and employment in the East Bay return to previous peak levels. However, the economic recovery appears to be gaining some steam in late 2011. The technology-related sectors have been stronger, while other sectors like construction, real estate, and government continue to struggle. Although the strength of the tech sector is beneficial, it cannot carry a recovery on its own.

- ◆ ***Strong Assets for Longer-term Growth.*** Despite the recession, central Bay Area cities like Oakland have assets that can contribute to longer-term economic growth. Those assets include: a location at the center of the large and growing Bay Area region; a large East Bay labor force and diverse housing options; world-class educational and research institutions nearby; good transportation and transit accessibility; major international gateways through the Port of Oakland and the major airports; and innovation industries that can attract venture capital funding and other investments.

- ◆ ***Innovation is Important.*** The Bay Area economy is increasingly driven by innovations that bring new technologies and products to market. While already synonymous with Silicon Valley, innovation industries are now an important component of the East Bay economy as well. U.C. Berkeley and Lawrence Berkeley National Laboratory (LBNL) are top-ranked research institutions in the Inner East Bay and provide support for many of the area's professional, scientific, technical, and information service, and advanced manufacturing businesses. Biotechnology and clean technology industries, in particular, are becoming established in the East Bay.

- ◆ ***Professional, Scientific, and Technical Services (PSTS) and Information Sectors Are Strong.*** This group includes scientific research and development services tied to life sciences, biotechnology, renewable energy, and clean technologies, as well as professional services, software design, and information/media businesses. Employment in these sectors has grown as has their concentration in the East Bay. PSTS, in particular, is forecast to be a significant driver of growth in the future.

In Oakland, PSTS activities are primarily located in downtown office space. However, there could be potentials for growth in converted warehouses and other older space, as well as in lower-rise campus and business park development outside the downtown area.

- ◆ ***Manufacturing Still Matters.*** Manufacturing remains a source of good-paying jobs and continues to play an important role in the East Bay economy. This is particularly true for custom/urban manufacturing serving regional markets, manufacturing of clean/green products, and advanced manufacturing that supports the high-tech sectors.
 - *Custom/Urban Manufacturing:* typically smaller businesses serving niche and specialty markets in the Bay Area, including: artisan bakeries and other foods; beverages; textiles, apparel, and accessories; custom products including artisanal (furniture, woodwork, sign-making, etc.); printing and publishing; and fabricated metal products.
 - *Manufacturing of clean/green products,* such as green packaging, green building materials, and energy-related products (solar, battery/storage, bio and other sustainable fuels, LED-lighting, etc.).
 - *Advanced manufacturing* of pharmaceuticals, medical devices and equipment, measuring/control instruments, industrial machinery, electronic components, and other scientific-related products.

- ◆ ***Construction Sector is Concentrated in the East Bay and Likely to Grow Rapidly as the Economy Rebounds.*** The construction sector has been a significant driver of the East Bay economy. While this sector has declined

substantially due to the recession and collapse of the housing market, it is forecast to grow at a high rate in coming years as the sector recovers from its losses. Construction and related product businesses have been strong in Oakland and West Oakland, serving new building construction, remodeling and repair, and infrastructure construction.

- ◆ ***Growth in Transportation/Distribution/Warehousing and Wholesale Trade.*** These industries have shown recent growth, fueled by growing exports due to a continuing weak U.S. dollar. Future growth is anticipated over the longer term, consistent with expansion plans at the Port of Oakland and growing population and business activities in the Bay Area region.
- ◆ ***Small and Mid-size Companies and Home-Grown Companies are Important for Job Growth.*** As in most regions, most (about 55 percent) of the employment in the East Bay is created by small to mid-sized establishments with 3 to 100 employees. Very small firms of one to two employees comprise two-thirds of all businesses, but employ 15 percent of the jobs. One-third of the East Bay's jobs occur in establishments that employ more than 100 people.

Companies starting and expanding locally contribute most of the employment growth. Although companies moving in and out tend to get media attention, they contribute about seven percent of the new jobs in an average year. Thus, it is important for local jurisdictions to nurture small businesses and to plan for expansion options so as to retain growing businesses. These factors are relevant to considering economic development strategies for West Oakland.

- ◆ ***Infrastructure Investments, Remediation, and Modernization of Older Facilities Needed to Facilitate Business Development in the Inner East Bay, Including West Oakland.*** Much of the older industrial space in the Inner East Bay was originally oriented to investments in railroads and shoreline infrastructure, and became preferred locations for manufacturing, warehouse, and transportation industries. As the economy grew over time, growth of lighter manufacturing and technology industries tended to locate in newly built R&D/flex space in predominantly greenfield locations. East Bay examples include R&D/flex developments in Alameda, southern Alameda County, and the Tri-Valley. The greenfield developments are easier to undertake and much less costly than reuse/redevelopment projects due to the high costs of environmental cleanup and the significant upgrades in basic infrastructure that can be required to enable development. Where older industrial areas have been improved, Redevelopment Agency participation has often been needed to facilitate reuse and business development. Further, local land use policies and economic development strategies have also been needed to encourage and support the desired outcomes. Examples include reuse of older industrial areas in Emeryville.

POTENTIAL MARKET SECTORS/INDUSTRIES FOR WEST OAKLAND

Within the larger market context summarized above, market sectors and industries were identified for more detailed consideration as potential uses/businesses for the areas designated for business mix and light industrial use in West Oakland. The sectors identified are ones that are anticipated to be growing. The sectors are defined to include the business functions within industries that occupy the types of locations and building space existing and anticipated in West Oakland. These could include light industrial, R&D/flex, R&D/lab, business campus, and incubator space in existing and new buildings. Business functions and industries that occupy office space, particularly Class A office space, as offered in Downtown Oakland, are not included. Business functions involved in general manufacturing, transportation, large warehouse, trucking and maritime support, waste management and recycling, and other heavier industrial functions and uses also are not included.¹

Employment data for selected industries are summarized in Table 1 to provide context for the market sector assessments that follow. The market sectors of interest are included in industry groups that represent about 35 percent of Alameda County employment in 2010. The data are provided for 2000, 2006, and 2010, as the most recent 2010 data reflect the impacts of the recession. Changes over the past 10 years also reflect the major recession and are not indicative of longer-term trends and potentials.

MARKET SECTOR ASSESSMENTS

The assessments of five potential market sectors for West Oakland are presented in the sections that follow. The market sectors include:

- A. Life Sciences/Biotechnology;
- B. Clean/Green Economy and Clean Technology;
- C. Small, Urban Manufacturing;
- D. Construction and Related; and
- E. Information Sector: Digital Media and Information Technology.

A separate assessment is written for each sector. The assessments are presented in outline and bullet item format because of the large amount of information involved. Each assessment addresses the industries and types of businesses included in the sector, factors affecting business location decisions, the land use and building product types appropriate for each group, employment supported by the sector and its share of the local/regional economy, competitive locations for the sector within the Bay Area, trends for both the shorter- and longer-term futures including job growth potentials and possible space absorption, and potentials for West Oakland to capture business/job growth and associated new development.

A short summary of the five market sectors and their potentials is included at the end of the assessments.

¹ While heavier industrial uses already existing in West Oakland can remain there, new or expanded business operations of these types are not encouraged or permitted in the Mandela/West Grand Opportunity Area or in other parts of West Oakland “within” the I-880 freeway. Oakland locations for those uses are designated in the Army Base and Port areas, in East Oakland, and in other areas along the I-880 freeway.

**TABLE 1
EAST BAY EMPLOYMENT IN SELECTED INDUSTRIES**

Industry	Alameda County						East Bay (Alameda and Contra Costa Counties)					
	2000		2006		2010		2000		2006		2010	
Professional, Scientific, and Technical Services	44,800	6.3%	50,600	7.2%	57,300	9.0%	67,200	6.4%	74,300	7.1%	80,200	8.4%
Information	21,700	3.1%	16,700	2.4%	14,000	2.2%	39,100	3.7%	30,100	2.9%	23,800	2.5%
Manufacturing	93,500	13.1%	75,600	10.8%	60,500	9.5%	116,900	11.2%	95,800	9.1%	78,600	8.3%
Construction /a/	39,200	5.5%	44,200	6.3%	30,300	4.7%	68,000	6.5%	74,400	7.1%	48,700	5.1%
Wholesale Trade	44,600	6.3%	39,700	5.6%	34,500	5.4%	53,800	5.1%	48,800	4.7%	42,100	4.4%
Transportation, Warehousing, Utilities	<u>33,000</u>	<u>4.6%</u>	<u>26,600</u>	<u>3.8%</u>	<u>24,000</u>	<u>3.8%</u>	<u>41,900</u>	<u>4.0%</u>	<u>34,200</u>	<u>3.3%</u>	<u>31,900</u>	<u>3.4%</u>
Total, Selected Industries	276,800	38.9%	253,400	36.1%	220,600	34.6%	386,900	36.9%	357,600	34.2%	305,300	32.1%
Total Employment	711,000	100.0%	702,400	100.0%	637,500	100.0%	1,047,600	100.0%	1,046,900	100.0%	949,900	100.0%

/a/ As construction employment is not a separate category in the EDD data for counties, the amount shown represents employment in the goods-producing category minus manufacturing employment. A very small amount of mining employment may be included.

Source: CA Employment Development Department (EDD), Annual Average Employment, March 2010 Benchmark.

A. Life Sciences/Biotechnology

Industries: Pharmaceuticals
 Medical Devices and Equipment
 Diagnostics Products

Life sciences/biotechnology includes industry segments in manufacturing and in scientific research and development (in the professional, scientific, and technical services industry in Table 1).

Business Functions: Research and development (R&D)
 Manufacturing/production (mfg.)
 Office/administrative support/sales and marketing

- Larger companies may have multiple functions on-site
- Start-ups focus on R&D

Key Factors Supporting Biotech in Bay Area

- Entrepreneurs spawned by culture of innovation
- U.C. system (universities and national laboratories) and Stanford University; industry/academic collaboration is important
- Strong venture capital community
- Small, local companies grown into large companies (i.e. Chiron/Novartis, Genentech/Roche, Gilead)
- Cluster effect – big players and mid-sized firms already here

Location Factors for Biotech Firms Within the Bay Area

- Proximity to major university research centers
- Cluster effect and established image; existence of critical mass of biotech companies
- Large cos.: sites for campus buildings with own identity; high amenity sites
Mid-size cos.: proximity to other biotech and/or affordability
Small cos.: proximity to other biotech; incubators; affordability
- Accessibility for work force
- Safe location
- Proximity to eating places, services, recreation
- Utilities: water, electrical, natural gas

Typically:

- Biotech in proximity to university research centers focuses more on R&D
- Biotech in more outlying locations focuses more on production

Building Product Types

- Specialized building product
 - Buildings with life science improvements:
 - Typically a mix of wet labs and office improvements
 - Can also include specialized manufacturing facilities
 - Most with back-up generators and ownership familiar with the industry
 - Most built new for life science users
 - Relatively costly building type to construct

- Development densities/types
 - Higher-density, urban model:
 - 4 stories, or more
 - structured parking
 - new construction
 - R&D park model:
 - 2-3 stories with surface parking
 - 4 stories or more with structured parking
 - new construction typically
 - often landscaped site
 - Life Science Incubators:
 - lab space and shared equipment
 - collaborative environment
 - assistance in business mgmt. and connection to venture capitalists
 - can occur through reuse of existing buildings.

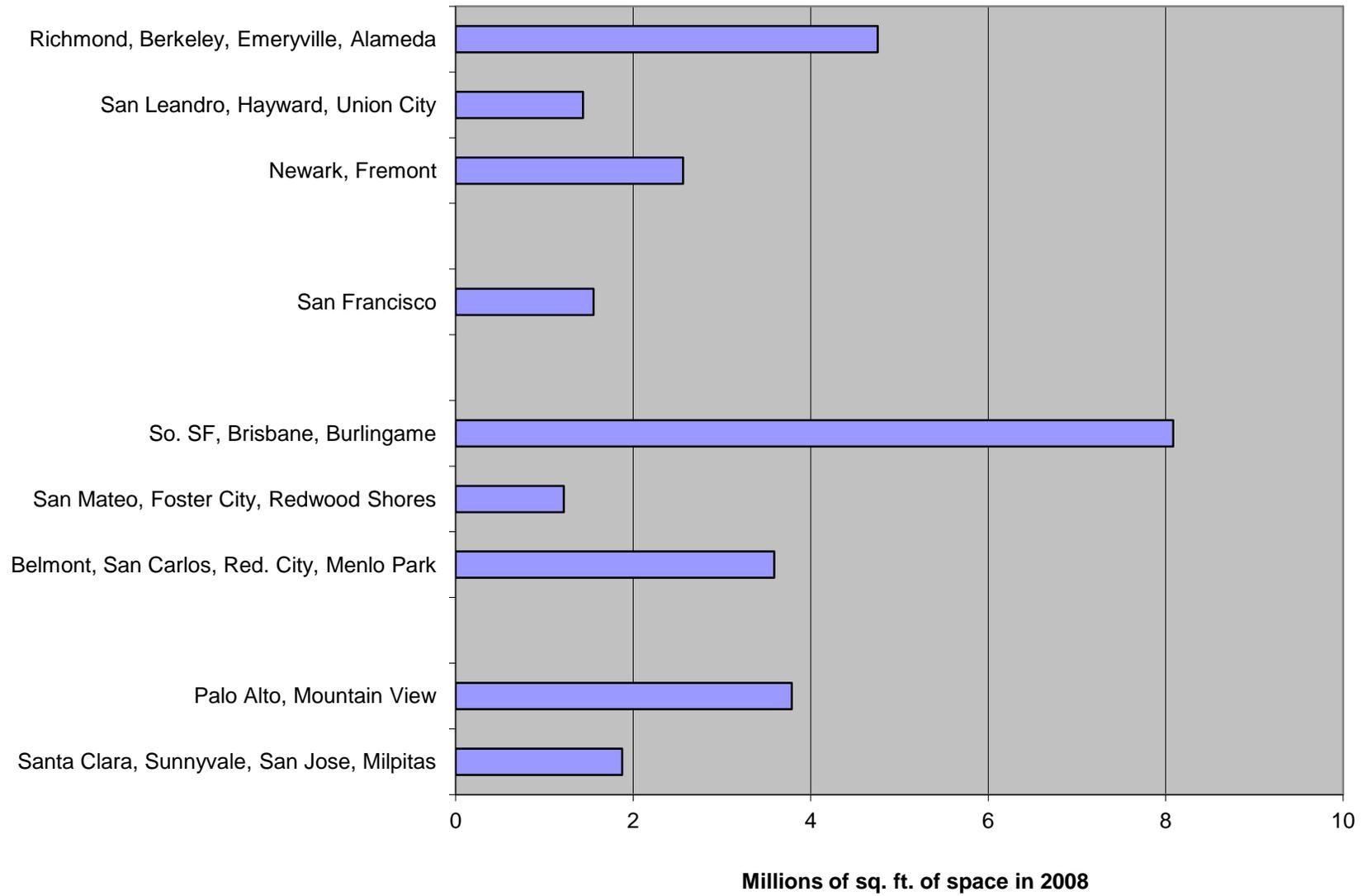
Central Bay Area Locations With Life Sciences

The locations with life science activities in the central Bay Area describe the competitive context for considering market potentials for Oakland and West Oakland. The most comparable context is that in the Inner East Bay, from Richmond to Alameda. The largest cluster of biotech activities is on the northern Peninsula. See Figure 1, Tables 2 and 3, and Figure 2.²

- ***Northern I-80/880 Corridor (Emeryville, Berkeley, Alameda, Richmond)***
 - About 4.8 mil. sq. ft. (excluding university and hospital research facilities)
 - Chiron/Novartis, Bayer, Onyx, BioRad, and many other companies. Chiron founded in Emeryville by UC Berkeley professors.
 - Higher-density development and corporate headquarters facility in Emeryville; biotech manufacturing in Berkeley; lower-density, less-costly R&D park developments in Alameda (Harbor Bay and Marina Bay) and Richmond.

² The data describing life sciences locations and space are from real estate company reports that track real estate leasing/sales activity. The data do not include institutional research facilities affiliated with major universities and hospitals. Thus, total space and life sciences activity are greater than shown by the space data. The 2008 data are the most recent to provide detail for locations within corridors/counties. The 2011 data are the most current, but are only available for corridors/counties.

Figure 1
Life Sciences Space in Central Bay Area



**TABLE 2
LIFE SCIENCES SPACE IN THE CENTRAL BAY AREA: DETAIL FOR SUBAREAS, 2008**

	Bldg. Base	Occ'd Space	Vacant Space	Vac. Rate	Avg. Askg Rent NNN	Mkt. Rent Range
	(Bldg. sf)	(Bldg. sf)	(Bldg. sf)		(per sf per mo.)	
<u>East Bay I-80/880 Corridor</u>						
North - Richmond, Berkeley, Emeryville, Alameda	4,754,513	3,917,643	836,870	17.60%	\$1.78	\$0.75-3.60
Central - San Leandro, Hayward, Union City	1,432,779	1,083,469	349,310	24.38%	\$1.13	\$0.75-1.35
South - Newark, Fremont	2,561,746	1,040,869	1,520,877	59.37%	\$1.82	\$0.95-2.75
	8,749,038	6,041,981	2,707,057	30.94%	\$1.72	\$0.75-3.60
<u>San Francisco</u>	1,552,929	1,321,929	231,000	14.88%	\$5.96	\$5.75-6.17
<u>San Mateo County</u>						
North - So. SF, Brisbane, Burlingame	8,083,052	6,852,957	1,230,095	15.22%	\$3.20	\$1.10-3.95
Central - San Mateo, Foster City, Redwood Shores	1,219,025	1,168,513	50,512	4.14%	\$1.60	\$1.35-1.75
South - Belmont, San Carlos, Red. City, Menlo Park	3,589,830	2,389,562	1,200,268	33.44%	\$2.01	\$0.95-2.65
	12,891,907	10,411,032	2,480,875	19.24%	\$2.59	\$0.95-3.95
<u>Santa Clara County</u>						
North - Palo Alto, Mountain View	3,787,415	3,107,143	680,272	17.96%	\$1.92	\$0.80-2.65
Central - Santa Clara, Sunnyvale, San Jose, Milpitas	1,876,605	1,765,327	111,278	5.93%	\$1.42	\$0.75-1.85
	5,664,020	4,872,470	791,550	13.98%	\$1.85	\$0.75-2.65

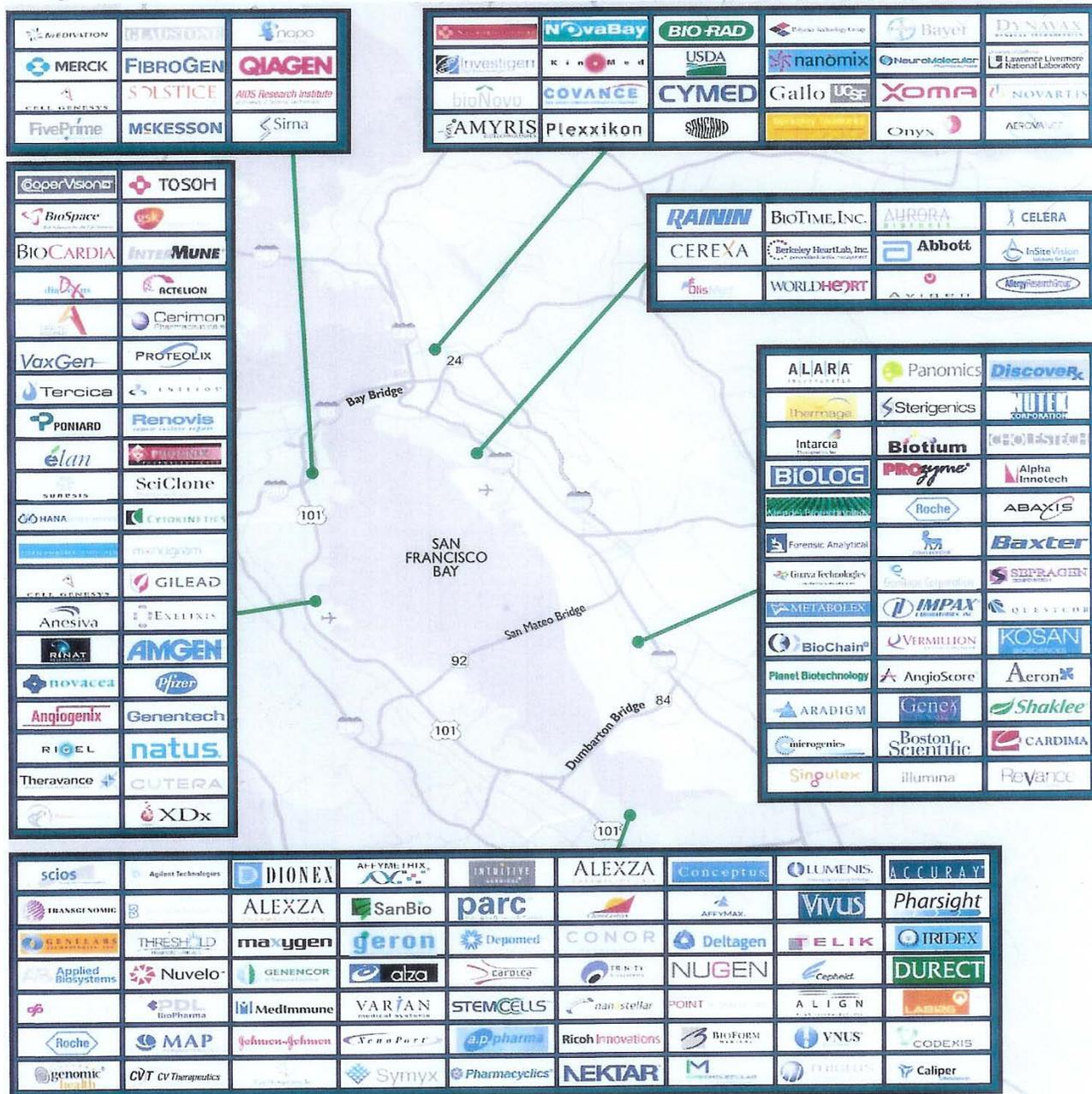
Source: Cassidy Turley Commercial Real Estate Services, Bay Area Life Science Report for Fourth Quarter 2008; Hausrath Economics Group.

**TABLE 3
LIFE SCIENCES SPACE IN THE CENTRAL BAY AREA, 2008 AND 2011**

	Bldg. Base (Bldg. sf)	Occ'd Space (Bldg. sf)	Vacant Space (Bldg. sf)	Vac. Rate	Avg. Asking Rate NNN (per SF per mo.)
<u>Quarter 4, 2008</u>					
East Bay I-80/880 Corridor	8,749,038	6,041,981	2,707,057	30.94%	\$1.72
San Francisco	1,552,929	1,321,929	231,000	14.88%	\$5.96
San Mateo County	12,891,907	10,411,032	2,480,875	19.24%	\$2.59
Santa Clara County	5,664,020	4,872,470	791,550	13.98%	\$1.85
TOTAL	28,857,894	22,647,412	6,210,482	21.52%	\$2.48
<u>Quarter 2, 2011</u>					
East Bay I-80/880 Corridor	8,823,757	6,880,221	1,943,536	22.00%	\$1.31
San Francisco	1,657,929	1,422,229	235,700	14.20%	\$3.97
San Mateo County	12,961,870	11,207,268	1,754,602	13.50%	\$2.38
Santa Clara County	5,506,032	4,664,710	841,322	16.30%	\$1.50
TOTAL	28,949,588	24,174,428	4,775,160	16.50%	\$2.07
<u>Change Q4 2008 - Q2 2011 (3-1/2 yrs.)</u>					
East Bay I-80/880 Corridor	+74,719	+838,240	(763,521)		(0.41)
San Francisco	+105,000	+100,300	+4,700		(1.99)
San Mateo County	+69,963	+796,236	(726,273)		(0.21)
Santa Clara County	(157,988)	(207,760)	+49,772		(0.35)
TOTAL	+91,694	+1,527,016	(1,435,322)		(0.41)
Source: Cassidy Turley Commercial Real Estate Services, Life Sciences Market Snapshot for Second Quarter 2011 and Life Sciences Report for Fourth Quarter, 2008; Hausrath Economics Group.					

FIGURE 2

Bay Area Life Science Neighborhood



Spillover of biotech activity from Emeryville/Berkeley has jumped to Alameda and Richmond.

- Good proximity to major research centers at UC Berkeley and Lawrence Berkeley National Laboratory (LBNL), particularly for Berkeley and Emeryville locations.
 - CHORI, Children’s Hospital Oakland Research Institute, undertakes biomedical research in Oakland, although not included in the real estate data.
 - About 1.5-1.8 mil. sq. ft. of 4.8 mil. sq. ft. total located in Emeryville and Berkeley.
 - Relatively low vacancies in Emeryville/Berkeley
 - 2007 development of 245,000-sq.-ft. EmeryStation East (Wareham Development). Occupied largely by biofuels research (not medical-related). (Biofuels discussed under Clean Economy in next section.)
 - Recent development of 9,300-sq.-ft. incubator in West Berkeley (Wareham Development) for life sciences, physical sciences, and cleantech start-ups (part of QB3: CA Institute for Quantitative BioSciences with labs at UCB, UCSF, and UCSC). Done as reuse of portion of older industrial building.
 - **Partnership** being formed between cities of Berkeley and Emeryville, Wareham (developer), LBNL, and QB3/U.C. Berkeley. Will do joint marketing and branding to attract growth of life sciences.
 - Expansion plans and large potential supply of land for future development:
 - Emeryville: 94,000 sq. ft. under construction in 2011, EmeryStation Greenway Building
 - Emeryville: 200,000 sq. ft. in planning/negotiations in 2011, EmeryStation West Transit Center adjacent to Amtrak station.
 - Sites offered for LBNL second campus in Emeryville and in Berkeley, each offered up to 2 mil. sq. ft. (overlaps with plans above).
 - West Berkeley has substantial potential for development on large industrial sites. Recent EIR identified potential for up to 1.9 mil. sq. ft. of new development, about 1.3 mil. sq. ft. for R&D space.
 - In Alameda, possible reuse of Alameda Naval Air Station could offer substantial land for new development.
 - Like Oakland, Richmond has substantial land in older, industrial use that could be available for new development.
- **San Francisco**
 - About 1.7 mil. sq. ft. and growing
 - Development of UCSF hospital and research facilities in Mission Bay has spurred development for other life sciences in proximity (UC facilities not included in space numbers)
 - Higher-density, high-quality, high-rent life science buildings in SF/Mission Bay
 - Expansion plans for Biotech in San Francisco:
 - About 1 mil. sq. ft. approved in Mission Bay
 - Up to 2.5 mil. sq. ft. in Pier 70 development, south of Mission Bay
 - About 1.5 mil. sq. ft. for life sciences being planned in Hunters Point

- **BioSF** partnership set up to attract life science companies, build an ecosystem of companies around those already there, and create resources to help start-ups lower their costs. Represents a partnership between SF Mayor’s Office, nonprofit San Francisco Center for Economic Development, and QB3/UCSF (CA Institute for Quantitative Biosciences). Has full-time BioSF manager.
- **Northern San Mateo County (South San Francisco, Brisbane, Burlingame)**
 - About 8.1 million sq. ft.
 - Genentech, Amgen, and many other companies. Genentech founded in So. SF in 1976. Genentech created major presence that others have followed.
 - High-quality campus developments. Most with water views.
 - Proximity to UCSF; access to Stanford and UC Berkeley
 - Proximity to SFO airport
 - Strongest growth recently, among biotech in the Bay Area
 - Pro-business attitude of So. SF City government has been important for attracting biotech; proactive approach to infrastructure and transportation
 - Company buses from SF and BART serve larger campuses; new Ferry connection to/from East Bay/Jack London Square is under construction
 - Major expansion plans and entitlements:
 - 8.2 mil. sq. ft. in approved projects for R&D/office; most planned for biotech although now marketing for other high-tech as well
 - Additional 5.6 mil. sq. ft. in proposed projects
 - Projects by large, national developers and biotechnology REITs.
- **Rest of San Mateo County and Santa Clara County**
 - Largest amounts of space in vicinity of Stanford University
 - 3.6 mil. sq. ft. in southern San Mateo County
 - 3.8 mil. sq. ft. in northern Santa Clara County
 - Space in mid-Peninsula as well; about 1.2 mil. sq. ft.
- **Rest of East Bay I-80/880 Corridor**
 - About 1.4 mil. sq. ft. in central corridor (San Leandro, Hayward, and Union City)
 - About 2.6 mil. sq. ft. in south corridor (Fremont and Newark)
 - Typically in R&D park development in these areas
 - Relatively high vacancies in these submarkets
 - Areas get some spillover from San Mateo County

Biotechnology Employment

Life Sciences and Biotechnology have a strong foundation in the Bay Area and the East Bay. Though relatively modest-sized, biotechnology industries have been growing. (See Tables 4, 5, and 6.)

- Along the East Bay I-80/880 corridor, life sciences/biotechnology companies support about 16,200 jobs (2011), accounting for about 2 percent of total employment. Life sciences jobs in the East Bay’s university and hospital research facilities are in addition to this total.
- Biotechnology is relatively more important in San Mateo County, where the 26,400 jobs in life science companies represent over 8 percent of total county employment.
- Overall, employment in life science companies throughout the central parts of the Bay Area totals about 57,000 jobs (2011).
- Trends show that biotechnology employment has been growing. In California, the industry grew at nearly 2 percent per year from 2000 to 2010, despite the recession. Over the past 20 years from 1990 to 2010, biotech grew at an average annual rate of 1.8 percent.

TABLE 4 EMPLOYMENT IN LIFE SCIENCES/BIOTECHNOLOGY SPACE IN THE CENTRAL BAY AREA		
	2008	Mid-2011
East Bay I-80/880 Corridor	14,220	16,190
North	9,220	
Central	2,550	
South	2,450	
San Francisco	3,110	3,350
San Mateo County	24,500	26,370
North	16,130	
Central	2,750	
South	5,620	
Santa Clara County	11,460	10,980
North	7,310	
Central	4,150	
Total	53,290	56,880
<p>NOTE: Employment figures are order-of-magnitude estimates based on the real estate company data for space occupied by life sciences/biotechnology companies. The estimates assume an average of 425 sq. ft. space per employee. The space data and employment estimates do not include employment in major institutional research facilities involved in biotechnology research.</p>		
<p>Source: Hausrath Economics Group based on data in Tables 2 and 3.</p>		

**TABLE 5
LIFE SCIENCES/BIOTECHNOLOGY EMPLOYMENT
IN THE CENTRAL BAY AREA AS SHARE OF TOTAL EMPLOYMENT**

	East Bay I-80/880 Corridor	San Mateo County	San Francisco- Oakland- Fremont Metro Area	Santa Clara County	California /c/
Biotech Jobs, mid-2011 /a/	16,190	26,370	45,910	10,980	161,800
<i>Biotech Share of All Jobs, 2010 /b/</i>	2.5% of Alameda Co. 1.5% of East Bay: Alameda and Contra Costa Cos.	8.4%	2.6%	1.3%	1.1%
/a/ See Table 4.					
/b/ Total employment from CA EDD. The comparisons reflect a small difference in time frames. Total employment data for 2010 were the most current available, although the biotech estimates are for mid-2011.					
/c/ Biotech employment for CA based on EDD data in Table 6.					
Source: Hausrath Economics Group based on sources above.					

**TABLE 6
TRENDS IN LIFE SCIENCES/BIOTECHNOLOGY/R&D EMPLOYMENT
IN CALIFORNIA, 1990-2010**

	1990	2000	2006	2010	Change, 10 yrs. 2000-2010		Change, 20 yrs. 1990-2010	
					No.	Annual Avg.	No.	Annual Avg.
Pharmaceutical and Medicine Mfg.	23,200	38,000	44,000	43,500	+5,500	1.36%	+20,300	3.19%
Scientific Research & Development	89,300	95,200	106,200	118,300	+23,100	2.2%	+29,000	1.42%
Total	112,500	133,200	150,200	161,800	+28,600	1.96%	+49,300	1.83%
<i>Biotech Share of All Jobs</i>	0.9%	0.9%	1.0%	1.1%				
NOTE: Statewide biotechnology employment is estimated based on the two reported employment categories shown above. The scientific research and development category includes other R&D in addition to biotechnology.								
Source: California Employment Development Department (EDD), Annual Average Employment, March 2010 Benchmark. Hausrath Economics Group.								

Trends

- **2000 to 2007**
 - Life Sciences industries had been growing in the Bay Area, space vacancies were low (in northern San Mateo County and northern East Bay I-80/880 corridor in particular), and rents were on the rise. This created strong developer interest, and numerous development projects were proposed. Entitlements resulted for a large amount of new space (summarized above).

- **2007-2011**
 - During the recession, the large pharmaceutical companies went into consolidation mode. A wave of mergers and consolidations occurred and large companies acquired promising start-ups. These changes returned space to the marketplace.
 - Regional overall vacancies of around 15 percent in 2005/2006/2007 increased to around 21 percent in 2008/2009, and rents declined. By 2011, vacancies came down to 16-17 percent, due to lower rents intended to move vacant space. A fairly significant drop in vacancy is occurring during 2011 and could reach 13-14 percent by year end.
 - Overall, regional rents are now averaging about \$2.00 per sq. ft. per month (NNN) in 2011, down from about \$2.50 per sq. ft. in 2008. Rents for newer space in desirable urban locations are in the range of \$3.50 to \$4.00 per sq. ft. per month.
 - During this period, market conditions have limited the development of new biotech space despite the large backlog of entitlements.

- **Near-term Future (next 5-10 years)**
 - As vacancies decline and rents increase, new construction is anticipated to resume. There are still some consolidations going on, such as Bayer's closing of its facilities in Emeryville, that could delay the need for new construction over the next several years.
 - As new construction occurs, most will come from the backlog of already entitled projects, before additional new development occurs.
 - In the East Bay, the location of LBNL's second campus will influence the locations for other growth. It also could influence the rate of other new construction, if the lab consolidates its activities on the new campus and returns existing space to the marketplace.

- **Longer Term**
 - Potentials are good for Bay Area life sciences over the longer term. Growth will be driven by research and the discovery of new drugs and technologies.
 - Forecast scenarios for life sciences reflect average annual growth of 1.6 percent to 2 percent per year over the next 20 years. Forecasts developed for the *MTC Goods Movement/Land Use Project* reflect growth of 2 percent per year for pharmaceutical manufacturing in the central Bay Area.
 - Assuming growth averaging 2 percent per year, the following forecast scenario could apply for the central Bay Area, including:

- East Bay I-80/880 Corridor – North and Central (Richmond to Union City);
- San Francisco; and
- San Mateo County – North and Central (So. SF to Redwood Shores) and excluding the South Bay.

2010/2011: 37,000 jobs in central Bay Area

2030: 55,100 jobs

Growth: +18,000 jobs (2% per year average)

+7.65 mil. sq. ft. space over 20 years

~380,000 sq. ft. per year average absorption

This aggressive scenario reflects a growing concentration of this sector in the Inner East Bay, San Francisco, and northern San Mateo County.

Major institutional growth in life science research would likely be in addition to the above forecast, including university, hospital, and/or national laboratory research expansion.

- The current pipeline of development for life sciences in these areas exceeds the demand under this fairly aggressive forecast.
 - 9.5 mil. sq. ft. in approved projects in Emeryville, San Francisco, and northern San Mateo County
 - 13.6+ mil. sq. ft. in planned and proposed projects in Emeryville, Berkeley, San Francisco, and northern San Mateo County
 - Large supply of land for potential, additional space, particularly in East Bay I-80/880 corridor from Richmond to Union City

The large supply indicates that other sectors will be needed to absorb all of the space and/or not all of the space envisioned will be built in this time frame.

Potentials for West Oakland

- Very competitive market context
 - Established clusters of life sciences are strong and have substantial expansion plans already underway with entitled and planned developments and marketing partnerships already formed.
 - There is a lot of additional interest in attracting this sector from communities throughout the central Bay Area and East Bay I-80/880 corridor.

Potential competitive areas that could enter the Inner East Bay market:

- Alameda Naval Air Station which may be able to offer low-cost land, and may attract a federal research institution.
- East Bay locations in proximity to the site chosen for the second campus of Lawrence Berkeley National Laboratory (LBNL). West Oakland is not on the shortlist of potential locations.

- City of Oakland interest in developing a science and innovation business park in East Oakland, in the vicinity of the Coliseum and Oakland Airport Business Park.
 - Potential for life sciences development at Oak-to-Ninth/Brooklin Basin, the only Oakland site on the shortlist of finalists for the second LBNL campus.
- Could be difficult to establish life sciences/biotechnology in West Oakland in the nearer term, and for a while into the future
 - Improvements in the area to encourage and attract business development more generally would be beneficial to laying the groundwork for potential future biotech development.
- A strategy could be to build on West Oakland's close proximity to Emeryville and U.C. Berkeley and LBNL, so as to be positioned to capture demand once the Emeryville/Berkeley areas are more fully developed.
 - Could go faster if Emeryville site chosen for 2nd LBNL campus. Could go slower if more distant site with large surrounding land area is chosen (such as Richmond).
 - Should pursue possibility of joining the Emeryville/Berkeley/Wareham/U.C. partnership for branding and joint marketing. Intent would be to position West Oakland as providing sites for continuing life sciences expansion nearby. Partnership with the key players (Wareham, UC) could be very important.
 - Could be easier to attract smaller companies and start-ups first. These could be attracted by offering lower-cost/lower-density space options. Start-ups should grow over time and help attract other companies to the area (as Chiron did in Emeryville).
- Might be potentials for CHORI expansion in Oakland and possibly West Oakland. Should stay in contact with CHORI and Children's Hospital.
- To be attractive to future biotechnology companies, improvements are needed to improve amenities and infrastructure in the business areas and to improve safety and image of the area overall.

B. Clean/Green Economy and Clean Technology

Definition: Businesses that provide a diverse range of products, services, and processes that harness renewable materials and energy sources, reduce the use of natural resources, and/or cut/eliminate emissions and waste.

The segments of the economy that produce goods and services with an environmental benefit.

Industries: The clean/green economy includes segments of many industries:

- Segments of mature industries including manufacturing, construction, and public services (such as public transit and waste management).
- Newer segments responding to energy-related challenges, including the solar photovoltaic, wind, fuel cell, smart grid, biofuel, and battery segments/industries.

The chart in Table 7 identifies the industry categories and segments included as part of the clean/green economy in a recent major study.³ The newly-emerging cleantech segments within the broader clean/green economy are shown with an asterisk (*) in the table.

Clean/Green Economy and Cleantech in San Francisco-Oakland-Fremont Metro Area⁴

The clean/green economy is an increasingly promising source of new technologies, processes, and industries. Though relatively modest-sized today, clean/green economy industries have the potential for significant business and job growth.

- The San Francisco-Oakland-Fremont Metropolitan Statistical Area⁵ supported approximately 51,800 clean/green economy jobs in 2010, ranking fifth among regions nationally. Clean/green economy jobs represented 2.7 percent of total metro area employment. (See Table 8.)

³ There is no standard definition and no standard data with which to define and measure the emerging clean economy and cleantech industries. The analysis herein draws heavily from a recent, major study by The Brookings Institution, *Sizing the Clean Economy, A National and Regional Green Jobs Assessment*, 2011. A companion brief was developed by the Bay Area Council Economic Institute in July 2011, presenting Bay Area data from The Brookings Institution study.

⁴ The *clean/green economy* is a broad group that includes all of the industry types and segments identified in Table 7. The diverse group referred to as the *clean/green economy* or clean economy includes both the newly-emerging clean technology or cleantech industry segments and a broad range of mature and more traditional industries. In this assessment, the terms clean/green economy or clean economy are used to refer to the larger group, while the terms cleantech or clean technology industries refer to the newly-emerging segments that are a subset of the larger group.

⁵ San Francisco-Oakland-Fremont Metropolitan Area includes five counties: Alameda, Contra Costa, San Francisco, Marin, and San Mateo. Comparable data for the clean economy are not available for smaller areas.

**TABLE 7
CLEAN/GREEN ECONOMY INDUSTRY CATEGORIES AND SEGMENTS**

Category	Detailed Segments
Greenhouse Gas Reduction, Environmental Management, and Recycling	Air and Water Purification Technologies Carbon Storage and Management* Green Building Materials Green Chemical Products Green Consumer Products Nuclear Energy Pollution Reduction Professional Environmental Services Recycled-Content Products Recycling and Reuse Remediation Waste Management and Treatment
Energy and Resource Efficiency	Appliances Battery Technologies* Electric Vehicle Technologies* Energy-saving Building Materials Energy-saving Consumer Products Fuel Cells* Green Architecture and Construction Services HVAC and Building Control Systems Lighting Professional Energy Services* Public Mass Transit Smart Grid* Water Efficient Products
Renewable Energy	Biofuels/Biomass* Geothermal* Hydropower Renewable Energy Services* Solar Photovoltaic* Solar Thermal* Waste-to-Energy Wave/Ocean Power* Wind*
Agricultural and Natural Resources Conservation	Conservation Organic Food and Farming Sustainable Forestry Products
Education and Compliance	Regulation and Compliance Training
NOTE: Asterisk (*) identifies cleantech segments, defined as clean economy companies with a median birth year of 1996 or later.	
Source: <i>Sizing the Clean Economy: A National and Regional Green Jobs Assessment</i> , The Brookings Institution/Metropolitan Policy Program, 2011.	

**TABLE 8
THE CLEAN/GREEN ECONOMY: EMPLOYMENT IN THE BAY AREA, CALIFORNIA, AND NATIONAL**

	San Francisco- Oakland- Fremont Metro Area	San José- Sunnyvale- Santa Clara Metro Area	California	100 Largest Metro Areas	United States
Jobs 2003	36,027	19,360	239,064	1,276,388	2,110,208
Jobs 2010	51,811	18,868	318,156	1,705,897	2,675,545
<i>Annual Average Change in Jobs, 2003-2010</i>	+5.3%	-0.4%	+4.2%	+4.2%	+3.4%
<i>Clean Economy Share of All Jobs, 2010</i>	2.7%	2.2%	2.1%	1.9%	2.0%

Source: Brookings-Battelle Clean Economy Database, *Sizing the Clean Economy: A National and Regional Green Jobs Assessment*, The Brookings Institution/Metropolitan Policy Program, 2011.

- The clean/green economy is diversified. The largest segments are professional energy services (about 7,500 jobs), waste management and treatment (about 6,280 jobs), and professional environmental services (about 5,320 jobs). (See Table 9.)
- The San Francisco-Oakland-Fremont metro area is a major center for smart grid development, and also specializes in temperature control systems/services, green architecture and construction services, recycling and reuse, remediation, and solar energy.
- Clean/green economy employment in the metro area grew at an average annual rate of 5.3 percent between 2003 and 2010. (See Tables 8 and 9.)
- The San Francisco-Oakland-Fremont metro area has the most cleantech jobs of any region in the nation, with 13,920 jobs in 2010. These emerging industry segments grew at an average annual rate of 5.4 percent from 2003 to 2010. In 2010, they represented 0.7 percent of total metro area employment. (See Table 9. It shows cleantech as a subset of the larger clean/green economy.)
- The fastest growing clean/green economy segments 2003-2010 were all cleantech segments, including wind energy, fuel cells, smart grid, solar thermal, and battery technologies (see Table 9).

Cleantech/Energy Research Focused in the East Bay

- Within the metro area, research and development supporting clean technology and energy are particularly concentrated in the East Bay, at and around UC Berkeley and the Lawrence Berkeley and Livermore National Laboratories. That expertise has recently attracted three Department of Energy research institutes to the East Bay.

**TABLE 9
BAY AREA'S EMERGING CLEAN/GREEN ECONOMY**

	<u>San Francisco-Oakland-Fremont Metro</u>			<u>San José-Sunnyvale-Santa Clara Metro</u>			
	Jobs, 2010	Change 2003-2010	Annual Avg. % Change	Jobs, 2010	Change 2003-2010	Annual Avg. % Change	
<u>Clean/Green Economy Jobs – Total</u>	51,811	+15,784	+5.3%	18,868	-492	-0.4%	
Cleantech Jobs*	13,917 (27%)		+5.4%	6,192 (33%)		+12.6%	
<u>Largest Segments, 2010</u>				<u>Largest Segments, 2010</u>			
Professional Energy Services*	7,532	-1,081	-1.9%	Wind	3,000	+2,000	+17.0%
Waste Mgmt. and Treatment	6,278	+627	+1.5%	Waste Mgmt. and Treatment	2,947	+554	+3.0%
Professional Environment Services	5,319	+982	+3.0%	Energy-saving Consumer Products	2,347	-3,432	-12.1%
Public Mass Transit	4,791	+492	+1.6%	Solar Photovoltaic	1,988	+1,005	+10.6%
Conservation	4,417	+1,814	+7.8%	Public Mass Transit	1,637	+217	+2.1%
HVAC and Bldg. Control Systems	3,459	+2,859	+28.4%				
Green Architecture & Construc. Svcs.	3,028	+1,688	+12.4%				
Smart Grid*	2,861	+2,811	+78.2%				
Organic Food and Farming	2,537	+171	+1.0%				
Recycling and Reuse	2,055	+437	+3.5%				
Regulation and Compliance	1,767	+1,324	+21.9%				
Remediation	1,615	+432	+4.5%				
Solar Photovoltaic*	1,439	+1,293	+38.8%				
<u>Fastest Growing Segments, 2003-2010</u>				<u>Fastest Growing Segments, 2003-2010</u>			
Wind*	202	+201	+113%	Fuel Cells	272	+214	+24.7%
Fuel Cells*	130	+129	+100%	Wind	3,000	+2,000	+17.0%
Smart Grid*	2,861	+2,811	+78%	Remediation	100	+66	+16.7%
Solar Thermal*	184	+178	+63%	Green Consumer Goods	131	+83	+15.4%
Battery Technologies*	178	+164	+44%	Green Building Materials	75	+43	+12.9%

NOTE: Asterisk (*) identifies cleantech segments, defined as clean economy companies with a median birth year of 1996 or later.

Source: Bay Area Council Economic Institute, *Employment in the Bay Area's Emerging Clean Economy*, based on The Brookings Institution study, *Sizing the Clean Economy*, July 2011.

- In 2007, the Energy Biosciences Institute and the Joint BioEnergy Institute established the East Bay as the nation’s center for biofuels research and development. (At U.C. Berkeley and LBNL.)

- In 2011, the Joint Center for Artificial Photosynthesis was set up to create transportation fuel out of water, carbon dioxide, and sunlight, using local expertise in DNA, nano particles, and semiconductor thin film technology. Batteries, fuel cells, flywheel energy storage, and other technologies are under development using private sector partnerships and business models to ensure that the results of this applied multidisciplinary research are market ready and can be produced by the private sector. (At LBNL.)

Key Factors Supporting Clean/Green Economy and Cleantech in Bay Area and East Bay

- Strong regional scientific community and research expertise
- Major research institutions including UC system (university and national laboratories) and Stanford University
- Recently founded national biofuels R&D institutions
- Strong professional services sector
- Culture of commitment to the environment and health of the planet
- Entrepreneurs spawned by culture of innovation
- Strong venture capital community

Business Functions

There are a wide range of business types in the clean/green economy, performing a range of different business functions in the Bay Area.

- R&D/test products/design/software
- Management/financing/marketing and sales/administrative
- Production/manufacturing
- Professional services
- Public services
- Construction and related
- Waste management and treatment/recycling/remediation

Examples of cleantech businesses in the Bay Area are presented in Table 10, along with information about company type, location, product/service, and type of space in Bay Area facility listed. The type of space relates to the business functions being performed.

Land Uses/Building Types

There are a wide range of land use types for businesses in this sector.

**TABLE 10
EXAMPLES OF CLEAN TECHNOLOGY BUSINESSES IN THE BAY AREA**

Company	Location	Product/Service	Type of Space/Facility			Founded	Employment
			R&D/Lab	Mfg./Test Products/ Ind'l Park	Office		
<u>Sustainable Product</u>							
Ecologic Brands	Oakland (Hdqtrs.)	Manufactures and sells sustainable, molded fiber packaging for liquid brands. Headquartered in Oakland with current production offshore. On-shore production now being planned with Oakland as an option.			X	2008	11
<u>Building Innovations</u>							
Calstar Products	Newark	Mfg. bldg. materials with minimal energy and carbon footprint, and high percentage recycled content		X		2006	40
Project Frog	San Francisco	Designs energy-efficient modular bldgs. for com'l and school uses		X	X	2006	25
<u>Energy - Solar</u>							
Bright Source Energy	Oakland (Hdqtrs)	Utility-scale solar plant developer			X	2006	100+
Sungevity	Oakland (Hdqtrs)	Designs, finances, installs, and maintains rooftop solar electric systems			X	2006	300+
Tioga Energy	San Francisco	Finances, owns, and operates solar projects			X	2007	30
Recurrent Energy	San Francisco	Developer of utility-scale solar projects			X	2006	<100
<u>Energy - Wind</u>							
Pattern Energy Group	San Francisco	Financing the development of wind energy and transmission projects			X	2009	110
<u>Energy - Storage</u>							
Primus Power Corp.	Hayward	Builds large-scale batteries for utilities to adapt variable renewable energy sources		X		2006	30
Simbol Materials	Pleasanton	Environmentally-friendly production of metals for use in electric car batteries (licensed technology from LLNL)		X		2008	40
<u>Energy Efficiency</u>							
KEMA	Oakland	Energy consulting and testing/certification. International company with Oakland office.			X	NA	150
Hara	San Mateo	Maker of energy and environmental management software			X	2008	70+
Enxsuite	San Bruno	Software for companies to analyze and manage energy use and carbon emissions			X	2007	50+

(continued on next page)

**TABLE 10
EXAMPLES OF CLEAN TECHNOLOGY BUSINESSES IN THE BAY AREA**

Company	Location	Product/Service	Type of Space/Facility			Founded	Employment
			R&D/Lab	Mfg./Test Products/ Ind'l Park	Office		
(continued)							
<u>Smart Grid</u>							
Trilliant	Redwood City	Provides high-bandwidth communications networks for smart grid systems			X	1985	250
Grid Net	San Francisco	Developed open software platform to enable smart grid (control layer)			X	2006	65+
Lucid	Oakland	Provides real-time feedback technology for buildings.			X	2006	20
<u>Lighting</u>							
Intematrix Corp.	Fremont	Maker of advanced materials for LED lighting applications		?	?	2001	80
Bridgelux	Livermore	Maker of high-quality LEDs		X		2002/2008	300+
<u>Water</u>							
Driptech	Palo Alto	Maker of drip irrigation systems for small-plot farmers in developing countries (grew out of Stanford class)		X?	X?	2009	20
Clean Filtration Technologies	Redwood City	Water filtration technology company		X?	X?	2005	6
<u>Sustainable Fuels/Chemicals</u>							
Sirona Fuels	SF/Oakland	Bay Area's largest biodiesel manufacturer. Headquartered in San Francisco with production facility in East Oakland.		X	X	NA	NA
Solazyme	South San Francisco	Maker of renewable oils using algae as a catalyst for fuels, food, skin care, and other products	X		X	NA	135
Amyris	Emeryville	Uses synthetic biology techniques to create biofuels, cosmetics and industrial enzymes (techniques developed at UCB and LBNL)	X			2007	N/A
Genencor	Palo Alto (Hdqtrs)	Produces enzymes to lower costs and increase sustainability of industrial processes (over 400 com'l products)	X		X	1982	200+ (1,500 worldwide)
<u>Transportation</u>							
Claire Advanced Emission Control	San Leandro (Hdqtrs)	Designs and manufactures diesel emissions control and filtration systems		X	X	2000	55
Source: San Francisco Business Times, Cleantech Awards, June 2011; Hausrath Economics Group.							

- **Offices**
 - Many clean/green economy and cleantech segments locate in office space, many of those in downtowns
 - Most cleantech in Oakland now is in downtown office space (i.e. Sungevity, Bright Source Energy, Ecologic Brands, Lucid Design Group)
 - Examples of clean/green economy companies locating in office space:
 - Professional energy and environmental services
 - Green architecture, engineering, construction design
 - Solar and wind development, marketing, financing and management; developers of utility-scale energy projects (production done elsewhere)
 - Green/sustainable products companies (production elsewhere)
 - Energy-efficient construction design/software
 - Building control systems development
 - Smart grid software and communications networks; software to manage energy use and emissions
 - Government: regulation and compliance, management of public transit, waste management, etc.

- **R&D Space/Labs/Offices**
 - Research institutes
 - Biofuels and other enzyme and algae product development
 - Some overlap with biotech/life sciences under first market segment in prior section

- **Light Industrial Space: R&D/Manufacturing/Construction**
 - R&D, test product development, some production/assembly/construction
 - For these uses, existing buildings can often provide more affordable options than new construction
 - Examples of clean/green economy companies in light industrial space:
 - green packaging
 - green building materials (bricks, pavers)
 - modular buildings
 - green construction
 - battery technology/energy storage and related
 - lighting/LEDs
 - water reclamation
 - emission control technology and filtration

- **Industrial Space/Land**
 - Waste management and treatment
 - Recycling, recycled materials and products
 - Larger scale manufacturing/production
 - electric vehicle
 - solar panels and equipment
 - construction materials
 - Biodiesel production

- ***Building Types/Development Densities***
 - Office:
 - downtown offices, many in Class A space
 - business park model, typically 2-4 stories, structured parking or surface parking depending on setting
 - existing building space: office bldgs. and converted/rehabbed warehouses
 - R&D/Labs (see earlier section under life sciences/biotech)
 - higher-density urban model
 - R&D park model
 - Incubator (see earlier section under life sciences/biotech)
 - shared facilities; small spaces
 - assistance in business mgmt. and connection to venture capital
 - can occur through reuse of existing buildings
 - Light Industrial
 - 1-2 stories
 - surface parking
 - can include yard space
 - existing buildings and new construction
 - older industrial bldgs. renovated and divided up (if needed)
 - can include some office space
 - Industrial
 - 1 story
 - limited glass
 - may include some office space
 - may require clear heights
 - yard space
 - loading dock and/or loading doors
 - may require on-site truck loading areas

Trends

- ***2003-2010***
 - Nationally, the clean/green economy as a whole grew more slowly than the national economy overall. However, the emerging cleantech segments have seen substantial growth, outpacing the rest of the economy during the recession.
 - Clean/green economy employment in the San Francisco-Oakland-Fremont Metro Area grew at a high average annual rate of 5.3 percent. The emerging cleantech segments grew at a similar average annual rate of 5.4 percent.
 - By comparison, employment in the clean/green economy declined slightly in the San José-Sunnyvale-Santa Clara Metro Area, and experienced average annual job growth of -0.4 percent. Large losses during the recession – which heavily affected construction and jobs in lighting and energy-saving consumer products – outweighed the substantial gains in wind and solar.

- **Future**

- The clean/green economy is anticipated to be a source of new technologies, processes, and industries. Though relatively modest-sized today, clean economy industries and the cleantech segments in particular have the potential for significant growth.
- Due to the emerging nature of the cleantech economy, it is difficult to accurately forecast the future. There is little trend data on which to forecast.
- There are public policy factors supporting growth of the clean/green economy (such as AB 32, cap and trade, climate action plans, green building standards, increased state recycling mandates, etc.). There also is growing demand for new, cleaner energy sources and fossil fuels.
- There could be tremendous potential for growth in the energy fields. Research into energy technologies is heavily dependent of federal spending, and the Bay Area and East Bay have attracted substantial resources from the Department of Energy. The extent of such spending in the future, however, is uncertain and will influence growth over time.
- For this effort, scenarios were developed to provide order-of-magnitude estimates of the growth that might occur over the next 20 years. For the purposes of this effort, the scenarios exclude the following segments: recycling and reuse, waste management and treatment, public mass transit, and organic food and farming.

Scenarios are for the San Francisco-Oakland-Fremont Metro Area:

- Case 1: Cleantech growth at 5 % per year average for 20 years
Other clean/green economy at 3% per year average for 20 years

2010: 36,150 jobs
2030: 77,080 jobs

Growth: +40,930 jobs (3.9% per year average)
+16.4 mil. sq. ft. space
~820,000 sq. ft. per year average absorption
- Case 2: Cleantech growth at 7.5% per year average for 20 years
Other clean/green economy at 4% per year average for 20 years

2010: 36,150
2030: 107,830

Growth: +71,680 jobs (5.6% per year average)
+28.3 mil. sq. ft. space
~1.4 mil. sq. ft. per year average absorption
- The growth scenarios above include business activities that occupy downtown and other office space (could be large share and possibly the majority) as well as those in R&D/lab/office space, light industrial/R&D/ manufacturing space, incubator space, and general industrial space.

Potentials for West Oakland

- Land use/building types (as described above) that might be attracted to West Oakland:
 - Light industrial/flex space
 - Incubator
 - R&D/lab space
 - Potentially, single tenant facility(ies) for largely office user(s) seeking campus development (after area improvements have been made)

Intent is to offer building types in West Oakland that are not now available in Oakland. The forecasts above include other growth seeking downtown office space and growth seeking general industrial locations.

- Likely to be easier to attract smaller companies and start-ups first, particularly with lower-cost/lower-density space options. Could attract to improved, existing buildings.
- It would be beneficial to establish relationships with UC Berkeley, LBNL, and related energy research institutions to keep apprised of plans and space needs. Efforts should be made to market West Oakland for new research facilities or expansions. West Oakland also could be marketed as a nearby location with relatively lower land and space costs than available in Emeryville.
- Continue to work through East Bay Green Corridor Partnership⁶ to market West Oakland and build its identity and image for clean/green businesses in building types not now available in Oakland.
- Competitive real estate market context in the Inner East Bay.
 - Context for R&D/lab and life sciences space is similar to that described earlier for life science/biotech sector.
 - For cleantech, it may be easier to attract smaller firms and start-ups to existing space or relatively lower-cost new space in West Oakland, particularly those not requiring new, costly lab space. Could also compete affectively for smaller, light industrial, cleantech business activities.
 - The contexts for the small manufacturing and construction sectors in the next sections are relevant as well, for the clean economy businesses in those sectors.
- Improvements needed to amenities and infrastructure in the business areas, particularly in the Mandela/West Grand opportunity area.
- May be potential for a cluster of green building materials, construction, green architecture/engineering/environmental services, and related businesses in West Oakland building around existing businesses in a part of the area. (See section addressing the construction sector later in this report.)

⁶ Partnership of eight cities along I-80/880 Corridor (from Richmond to San Leandro) and four academic institutions (UC Berkeley, LBNL, Cal State East Bay, and Peralta Community Colleges).

C. Small Urban Manufacturing

Definition: Businesses involved in the production and assembly of a wide range of products, including:

- specialized and customized products,
- technology and related products,
- artisanal production, and
- many other products.

Unlike the days when large companies dominated commodity production, today's manufacturing is dominated by small, specialized firms, many of which are located in America's urban areas, like in the central Bay Area.

Industries: Typically, smaller manufacturing businesses serving markets in the Bay Area. They sell products to consumers and many sell materials, products, and/or components to other producers. They produce a wide range of products including the following:

- Foods (artisan bakeries, ethnic foods, chocolate, desserts, oils and spices)
- Beverages (coffee mfg., tea mfg., wineries, breweries)
- Textiles, apparel, leather, and related
- Printing, paper, and publishing
- Custom products (including artisanal)
 - furniture and custom wood work (home and office)
 - construction-related (iron work, windows, doors, cabinets, countertops)
 - garden/landscape-related (fencing, gates. etc.)
 - sign making
- Fabricated metal products and machinery
- Electrical equipment and components
- Chemicals, minerals, and plastics (including pharmaceuticals, biofuels)
- Industrial arts

Manufacturing Today in the East Bay and Nationally

Despite declines in large-scale manufacturing during the past half-century, manufacturing still matters today. It continues to play an important role in the economy, particularly in Alameda County and the East Bay. (See Tables 11 and 12.)

- In the East Bay (Alameda and Contra Costa counties), manufacturing supports 78,600 jobs (2010), accounting for 8.3 percent of total employment. That is down from 95,800 jobs and 9.4 percent of the total in 2006, prior to the recession.

**TABLE 11
MANUFACTURING EMPLOYMENT IN THE CENTRAL BAY AREA**

	Alameda County	East Bay: Alameda and Contra Costa Cos. /a/	San Francisco- Oakland-Fremont Metro Area	Santa Clara County	California
Manufacturing Jobs, 2006	75,600	95,800	139,300	160,600	1,488,000
<i>Mfg. Share of All Jobs, 2006</i>	10.7%	9.1%	6.9%	18.3%	9.6%
Manufacturing Jobs, 2010	60,500	78,600	116,100	150,100	1,242,400
<i>Mfg. Share of All Jobs, 2010</i>	9.4%	8.3%	6.4%	17.8%	8.7%
NOTE: Data for 2006 is prior to the recession; data for 2010 reflects the impact of the recession.					
/a/ Manufacturing employment along the East Bay I-80/880 corridor in 2006 included approximately 37,000 jobs from Richmond to Union City and 63,500 jobs from Richmond to Fremont.					
Source: California Employment Development Department (EDD).					

- In Alameda County alone, manufacturing employment of 60,500 represents nearly 10 percent of total jobs. Manufacturing represents a larger share of the economy in Alameda County than it represents of the regional and state economies overall. Only in Santa Clara County is manufacturing relatively more important, because of the large amount of computer and electronics manufacturing in Silicon Valley.
- East Bay manufacturing is concentrated along the I-80/880 corridor.
- Within the central Bay Area, there are a large number of smaller manufacturing firms located along the I-80/880 corridor, from Richmond to Union City, including Oakland. In 2006, there were about 1,100 manufacturing establishments employing approximately 37,000 workers involved in producing a wide range of products and materials along this central corridor (see Table 12). Locations along the corridor are attractive for manufacturing businesses because they provide proximity to nearby population and business centers, provide good freeway accessibility to the rest of the region, and have historically offered a supply of affordable industrial space.
- Today, small manufacturers account for a large and growing share of all manufacturing. In 2007, nationally, 91 percent of America’s manufacturing businesses employed fewer than 100 people, and 70 percent employed fewer than 20 people. Many of these smaller firms are located in urban areas including the Bay Area.

**TABLE 12
URBAN MANUFACTURING ALONG THE
CENTRAL, EAST BAY I-80/880 CORRIDOR, 2006**

NAICS	Type of Manufacturing	I-80/880 Corridor, Richmond to Union City		
		Establishments	No.	Percent
311-312	Food and Beverages	96	7,250	19.6%
313-316	Textiles, Apparel, and Leather	64	1,293	3.5%
321, 337	Wood Products and Furniture	104	2,062	5.6%
322-323	Paper, Printing, and Related	120	3,285	8.9%
325	Chemicals (incl. pharmaceuticals)	67	3,073	8.3%
326-327	Plastics and Rubber; Stone, Clay, Brick, Glass, and Concrete Products	92	3,166	8.6%
331-332	Primary Metal and Fabricated Metal Products	262	6,108	16.5%
333	Machinery	75	1,903	5.1%
334-335	Computer and Electronic Products; Electrical Equipment, Appliances, and Components	107	4,381	11.9%
336	Transportation Equipment	25	1,263	3.4%
339	Miscellaneous Manufacturing	71	2,678	7.2%
111-112, 324	Other Manufacturing	<u>11</u>	<u>508</u>	<u>1.4%</u>
	TOTAL	1,094	36,970	100.0%
Average Employment per Establishment			34	
Source:	California EDD data for I-80/880 corridor, from the <i>MTC Goods Movement/Land Use Project for the San Francisco Bay Area</i> . See <i>Task 3A Report, Defining Goods Movement Businesses/Industries With Demand for Central Corridor Locations</i> , December 2007, prepared for MTC by Hausrath Economics Group and The Tioga Group.			

- Small, urban manufacturers today are engaged in “lighter” modes of production, and often use greener processes. Some are more technologically advanced, while others are more focused on artisan production. Their products are typically oriented to meeting local tastes and serving local/regional population and business markets.

- While there is sometimes the perception that manufacturing industries are “gone”, that is not the case, not in the Bay Area, the East Bay, nor the I-80/880 corridor including Oakland. Manufacturing facilitates business activity and household consumption in the central parts of the Bay Area and throughout the region, and contributes to the economic diversity of the local economies along the corridor.

Key Factors Supporting Urban Manufacturing in the Central Bay Area

- A large and growing region, with an increasing share of growth in central areas
 - Growth of business activity (Oakland, San Francisco, Inner East Bay, Peninsula)
 - Growth of population and household consumption; diverse population with demand for high-value products that meet local tastes
- Strong presence of entrepreneurs and artisans
- Dense infrastructure and logistics networks in the central Bay Area
 - Easiest to serve the region from the center, given Bay Area geography
 - Difficult to serve central areas from outside, due to limited access routes in/out
- Access to workers of various levels and skills
- Agglomerations
 - web of interconnected producers that sell materials, products, and components to each other
 - synergies that promote information and knowledge sharing

Location Factors for Manufacturing Businesses Within the Central Bay Area

- Proximity to markets served
 - Very important for perishable goods, custom products, and time-sensitive production
 - Important for interconnected producers
- Accessibility
 - Locations along major freeway routes
 - Proximity to airport/seaport for some businesses
- Affordable land and building space
- Utilities and infrastructure
- Locations in industrial/business mix areas, free of land use conflicts

Building Product Types

- Industrial/Manufacturing Space
 - 1-story, typically
 - may include some office/R&D space
 - may require clear heights
 - may require yard space
 - loading docks/doors
 - surface parking
 - older, industrial bldgs. typically
 - larger, older bldgs. divided up for smaller uses
 - new construction, potentially

- Light Industrial/Flex Space
 - 1-2 stories
 - surface parking
 - can include yard space
 - space adaptable for production, office, and R&D functions
 - could include clear heights and loading doors
 - some amenities
 - existing bldgs. and new construction

- Incubators/Shared Facilities
 - shared facilities; small spaces
 - shared equipment often
 - collaborative environment
 - may include assistance in business management
 - reuse of existing buildings
 - can be focused on particular types of manufacturing such as foods or apparel/fashion

Central Bay Area Locations With Industrial Land/Space

(See Figures 3 and 4 and Table 13)

- ***Largest Amounts of Industrial Land/Space Are in the Inner East Bay***
 - 162 mil. sq. ft. of industrial space located along the East Bay I-80/880 corridor from Richmond to Fremont, representing 54 percent of total manufacturing and warehouse space in the central Bay Area.
 - 37.5 mil. sq. ft. of industrial space in Oakland, the third largest amount in the central area. Large amounts of industrial space in nearby San Leandro (27.5 mil. sq. ft.) and Hayward (37.5 mil. sq. ft.).
 - Oakland's prominence as an industrial location reflects the city's central location in the region, the proximity it offers to the I-880 freeway and seaport and airport, and the historic development of industrial activities along the Oakland waterfront/shoreline.

Figure 3
Manufacturing and Warehouse Space in Central Bay Area

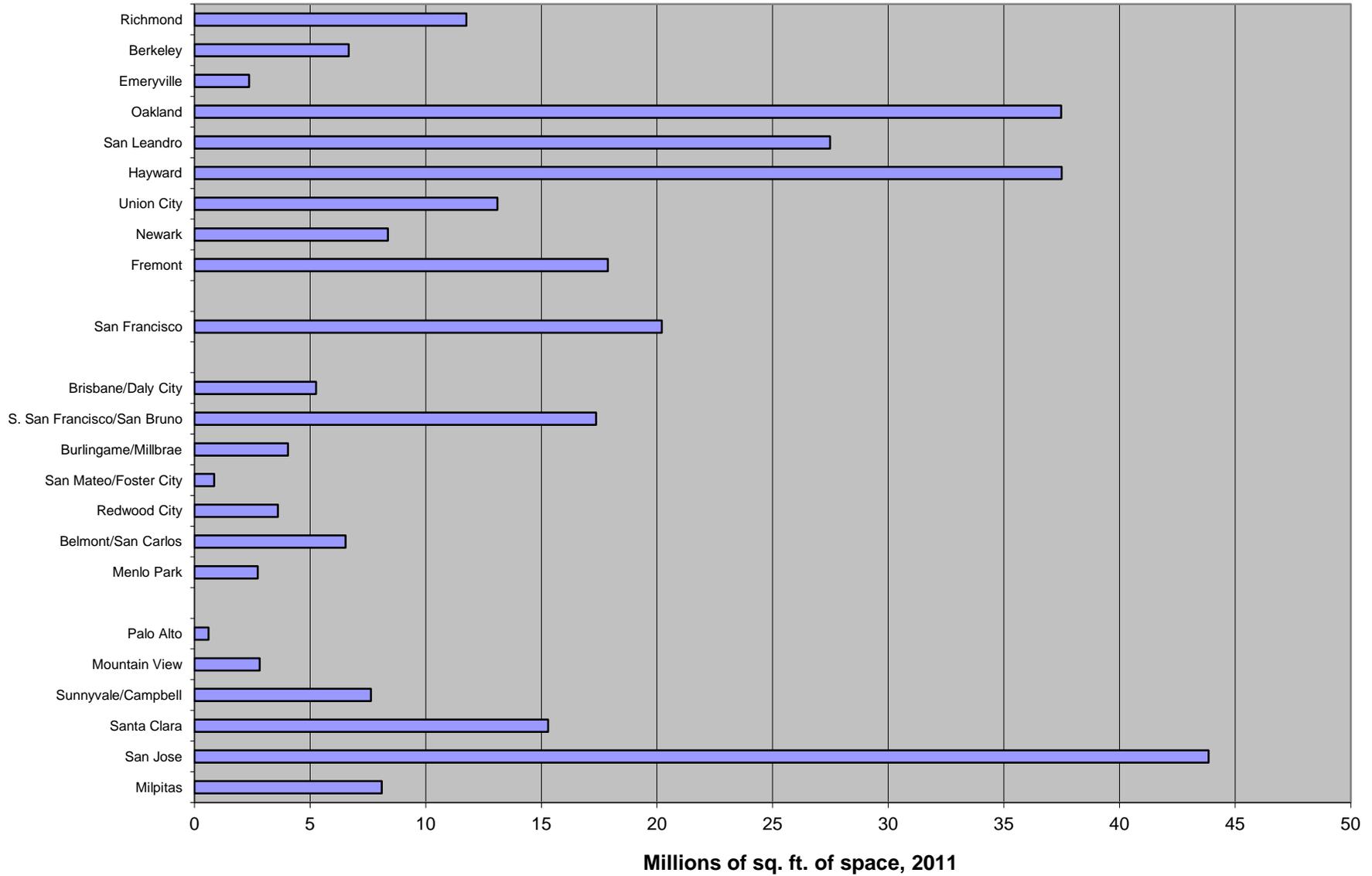
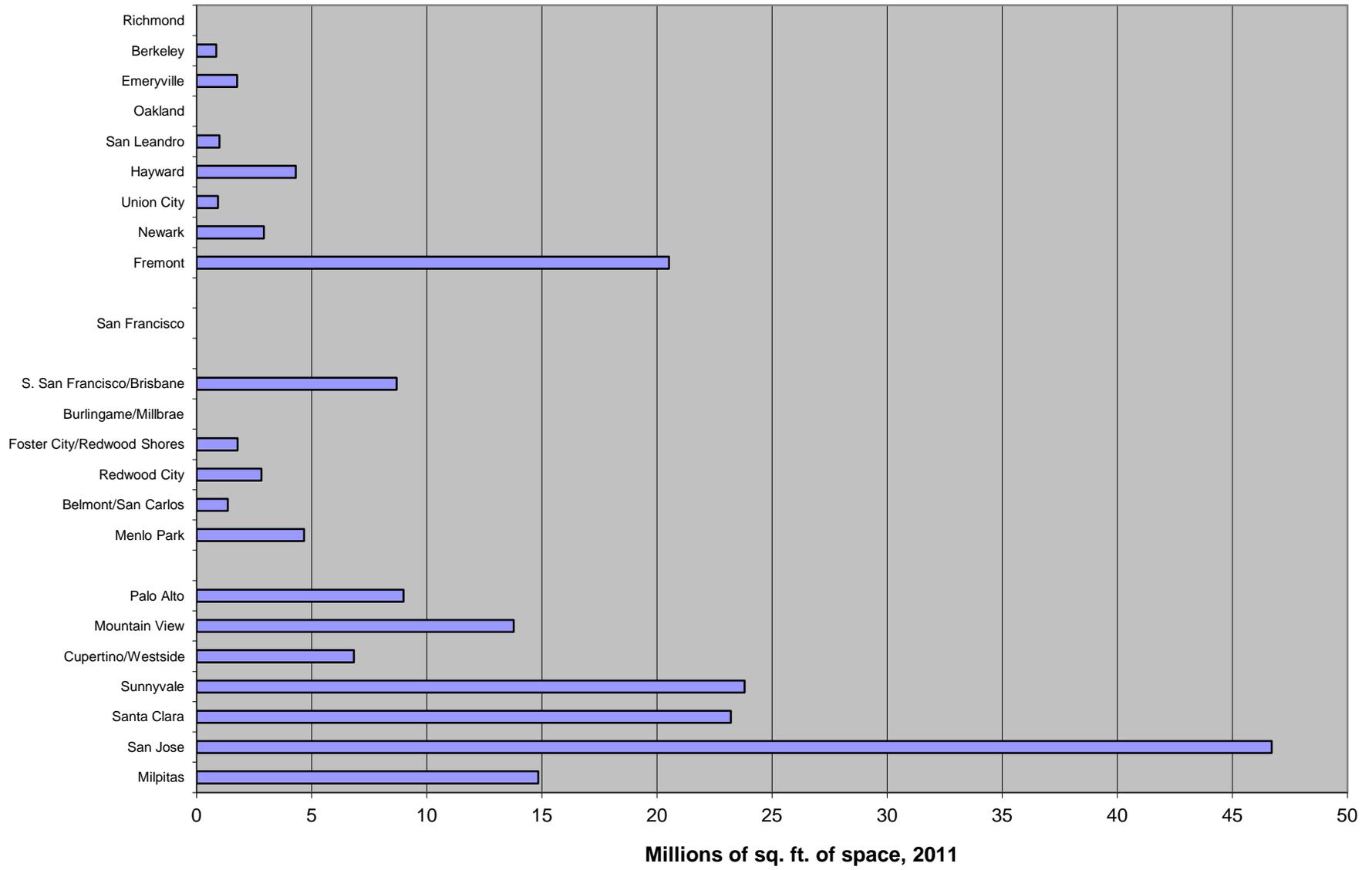


Figure 4
R&D Space in Central Bay Area



**TABLE 13
INDUSTRIAL SPACE IN CENTRAL BAY AREA, 2011**

	MANUFACTURING AND WAREHOUSE SPACE			R&D/FLEX SPACE		
	Bldg. Space (sq. ft.)	Vac. Rate	Avg. Askg Rent NNN (per sf per mo.)	Bldg. Space (sq. ft.)	Vac. Rate	Avg. Askg Rent NNN (per sf per mo.)
<u>East Bay I-80/880 Corridor</u>						
Richmond	11,756,663	14.3%	\$0.35	-	-	-
Berkeley	6,669,241	4.5%	\$0.57	849,998	0	NA
Emeryville	2,365,718	8.6%	\$0.56	1,761,239	0	NA
Oakland	37,478,617	5.3%	\$0.37	-	-	-
San Leandro	27,487,081	7.7%	\$0.35	991,294	16.0%	\$0.76
Hayward	37,498,420	9.9%	\$0.40	4,300,864	19.7%	\$0.65
Union City	13,097,096	10.4%	\$0.39	922,970	17.7%	\$0.91
Newark	8,366,005	8.2%	\$0.54	2,919,943	31.8%	\$1.16
Fremont	17,879,161	8.6%	\$0.48	20,523,430	23.2%	\$0.83
Total	162,598,002	8.3%	\$0.40	32,269,738	21.2%	\$0.85
<u>San Francisco</u>	20,211,656	6.3%	\$0.79	-	-	-
<u>Peninsula US 101 Corridor</u>						
Brisbane/Daly City	5,256,303	15.4%	\$0.72	-	-	-
S. San Francisco/San Bruno	17,366,879	10.1%	\$0.72	8,685,028	13.1%	\$2.71
Burlingame/Millbrae	4,040,817	6.5%	\$0.83	-	-	-
San Mateo/Foster City	848,419	8.6%	\$1.04	1,780,076	4.9%	\$1.18
Redwood City	3,602,807	7.3%	\$0.76	2,811,768	14.2%	\$1.82
Belmont/San Carlos	6,535,649	4.1%	\$0.82	1,348,126	28.2%	\$1.48
Menlo Park	2,736,817	4.9%	\$0.67	4,665,013	8.0%	\$1.60
Total	40,387,691	8.8%	\$0.74	19,290,011	12.3%	\$2.13
<u>South Bay (I-880/US101 Corridors)</u>						
Palo Alto	601,277	2.9%	\$0.92	8,983,085	6.4%	\$2.61
Mountain View	2,824,283	1.9%	\$0.79	13,768,172	9.4%	\$1.61
Cupertino/Westside	-	-	-	6,833,809	5.8%	\$1.76
Sunnyvale/Campbell	7,628,202	6.5%	\$0.67	23,807,416	13.6%	\$1.33
Santa Clara	15,290,548	6.8%	\$0.52	23,207,016	17.7%	\$1.04
San Jose	43,849,751	7.7%	\$0.51	46,706,666	18.9%	\$1.03
Milpitas	8,097,478	14.4%	\$0.45	14,843,140	20.2%	\$0.84
Total	78,291,539	7.9%	\$0.52	138,149,304	15.5%	\$1.26
TOTAL	301,488,888	8.1%	\$0.49	189,709,053	16.2%	\$1.14

Source: Cassidy Turley Commercial Real Estate Services, Market Snapshots for Manufacturing, Warehouse, and R&D, Second Quarter, 2011; Hausrath Economics Group.

- Manufacturing businesses located along the central I-80/880 corridor are primarily located in older industrial space.
- ***Relatively Low Rents and Low Vacancies for Industrial Space***
 - In the Inner East Bay, industrial rents average \$0.40 per sq. ft. per month (NNN), and range from \$0.35 to \$0.57 per sq. ft. The relatively low rents for industrial uses reflect the lower rent-paying abilities and lower densities of industrial business activities.
 - Industrial space has relatively low vacancies, averaging 8.3% along the East Bay corridor, even with the recent recession. Oakland has among the lowest vacancy rates, averaging 5.3% currently. The low vacancies indicate continuing demand for industrial space. Industrial vacancies are lower than vacancies for R&D/flex space and for commercial/office space.
- ***Newer R&D/Flex Space Concentrated in the South Bay***
 - Newer R&D/flex space has been built primarily on vacant land in the South Bay, on the Peninsula, and at the southern end of the East Bay corridor. Some R&D/flex space also has been built in the more central parts of the East Bay (Hayward, San Leandro, Emeryville, and Berkeley). (Also, there is R&D/flex space in Alameda although not shown in the real estate company inventories.)
 - Rents are higher for R&D/flex space than industrial space, averaging \$0.85 per sq. ft. per month (NNN) in the East Bay. Some small manufacturing businesses are located in R&D/flex space, although much of the space is occupied by R&D/office/business park/campus uses.
 - Rents are substantially higher for R&D/flex space in the South Bay and Peninsula, as most is occupied by high technology uses and business campuses.
 - Vacancies are relatively high for R&D/flex space, particularly in places with the largest amounts of space. In those areas, the market has been overbuilt for quite a while now, and prior to the recession.
- ***Competitive Space Supply in Surrounding Areas, and Examples of Recent Projects***
 - Industrial and R&D/flex space that is the most competitive with that in Oakland for urban manufacturing uses is the supply in nearby areas from Richmond to San Leandro including Alameda. These areas include older industrial space, improved older space, and some new construction.
 - The following are examples of recent projects with improved space for urban manufacturing uses.
 - Old Flint Ink Factory in West Berkeley. Conversion of an old factory into multi-tenant urban mfg./light industrial space.
 - Tenants: electric scooters and vehicles; solar panel testing; electric cables and connectors; roofing company; and clothing mfg.
 - 78,000 sq. ft. converted in first phase of 133,000 total sq. ft. bldg.
 - Converted space is “green” with lots of outside light to help energy efficiency.

- Harbor Bay Business Park in Alameda
 - 100-acre business park bought in 2003 with 75 acres of vacant land and 380,000 sq. ft. vacant building. Original plan for high technology park did not work.
 - Developers offered build-to-suit sites for home-grown companies in the East Bay. Have now completed more than 750,000 sq. ft. with only 10 acres of vacant land remaining.
 - Businesses there are a mix of industrial, life sciences, and food-related companies. Examples include:
 - Peet's Coffee & Tea Roasting Plant
 - Semifreddi's Bakery
 - Donsuemor (cookie maker)
 - The Cheese Works
 - Ninam Ranch (meat)
 - Allergy Research Group
 - UF Outdoors (North Face, JanSport, Eastpak, Lucy brands)
 - Uses include production, office/administrative, and R&D functions. Several are headquarters of smaller companies.
 - Development is a lower-rise business park offering light industrial/flex/office/R&D space. Site offers water views and running trails.
 - Developer has made reasonable deals that are cost-effective for businesses.
 - Entire area under single ownership by build-to-suit developer.

Trends and Issues: Industrial Land Supply

- ***Central Area Industrial Land Supply is Declining and Under Increasing Pressures***
 - ***Declining industrial land supply.*** The supply of manufacturing and warehouse space along the East Bay I-80/880 corridor declined by about 12 mil. sq. ft. from 2003 to 2007, a decline of about 7 percent.
 - ***Increasing costs of industrial land/space.*** As industrial supply declined, rents increased and vacancy rates declined for the remaining space, evidencing continuing market demand for industrial locations in the central areas. The decline of industrial land/space is not an issue of the structural decline of industrial activities, but the result of:
 - Market pressures for higher-value uses, including residential, commercial, and office/R&D development. Industrial businesses are typically lower-density uses that cannot pay to compete with higher-density, more intensive residential and commercial/R&D uses.
 - Local land use policies that allow and/or encourage new, higher-intensity uses in industrial areas.
 - Increasing land use conflicts as new development intensifies around industrial areas.

- ***Lack of investment in older industrial areas.*** Real estate market speculation in combination with permissive or uncertain land use policies have discouraged investment in industrial areas. Many older areas are in need of modernization and infrastructure improvements to more effectively serve growing industrial demand. Even though the potential supply of land for new, higher-density uses is very large relative to demand, lack of investment in older industrial areas makes it difficult to meet growing industrial demand.
- ***Effects of recession are temporary.*** The recession has slowed pressures for new development in industrial areas, although market pressures are anticipated to return once the economy recovers.
- ***Current land use policies along the East Bay I-80/880 corridor allow/encourage new uses in many industrial areas.*** Under adopted General Plan policies, about 40 percent of existing industrial land in the corridor is already planned for new uses. The largest changes are allowed in the northern and central corridor areas from Richmond to Oakland/Alameda. (See Table 14.)
- ***Demand for industrial land is growing.*** Industrial businesses are growing as is their demand for central corridor locations. Most serve local and regional markets, and seek and gain value from central area locations in proximity to the growing concentration of businesses and population in the central areas. In addition, the major transportation infrastructure that facilitates production, distribution, and goods movement exists along the central corridors.
- ***A declining central area industrial land supply could increase interest in industrial locations available in West Oakland,*** for small manufacturing businesses and other light industrial uses. A key issue will be whether improvements can be made to modernize and enhance the desirability of West Oakland’s older industrial areas and building stock while still offering industrial space at competitive/affordable levels.

**TABLE 14
LAND SUPPLY SCENARIOS FOR EAST BAY I-80/880 CORRIDOR
(Existing and Future Acreages by Land Use Type and Corridor Locations)**

Land Use	Richmond to Emeryville	Oakland/ Alameda	San Leandro/ Hayward/ Union City	Fremont/ Newark	Total
Industrial Land					
Scenario 1: Existing Land Supply	3,170	2,110	5,410	3,310	14,000
Scenario 2: Trends Land Supply	1,360	670	4,400	2,270	8,700
<i>Scenario 2 as % of Scenario 1</i>	43%	32%	81%	69%	62%
Commercial/Industrial/R&D Land					
Scenario 1: Existing Land Supply	170	350	150	1,310	1,980
Scenario 2: Trends Land Supply	620	1,250	520	1,760	4,150
<i>Scenario 2 as % of Scenario 1</i>	365%	358%	347%	134%	210%

NOTE: Scenario 1 assumes that industrial land supply remains at existing levels in approximately 2007. Scenario 2 assumes that industrial land converts to new uses over time, consistent with adopted local General Plans as of 2005/2006.

Source: MTC/ABAG and Hausrath Economics Group; *Bay Area Goods Movement/Land Use Project*, Task 4A Report, July 2008.

Trends: Small, Urban Manufacturing Business Activity

- ***Past***
 - Major structural changes occurred in manufacturing over the past 50 years. Employment declines reflected large gains in productivity (produce more with less labor) and increased international competition. There also was a shift from large integrated companies to decentralized networks of smaller, specialized firms, many located in urban areas.
 - Despite the changes and declines in employment, manufacturing still remains a source of good-wage jobs, and it continues to play a critical role in the economy.
 - Since 1994, the manufacturing sector in the Bay Area has averaged annual net absorption of approximately 470,000 square feet throughout the region. The growth has been accommodated in the existing building stock and in new space built primarily on vacant land, much of it in the South Bay.

- ***2006-2011***
 - There have been declines in manufacturing activity recently as a result of the economic recession. Manufacturing activity declined as a result of reduced spending by consumers and businesses. Closure of the NUMMI plant in Fremont has also had an impact. Formerly low vacancies for industrial space increased to modest levels during the recession.
 - As of mid-2011, the region's largest manufacturing space market remains in the East Bay. Vacancy rates are low, although rents remain relatively flat. Demand is expected to pick up as employment growth improves over the next one to two years.

- ***Future***
 - Modest growth is forecast for the diverse mix of manufacturing industries currently located in the central areas (excluding the biotech and cleantech industries analyzed and forecast separately).
 - The strongest growth will be in manufacturing offering specialized and custom products serving Bay Area markets, and in manufacturing supporting the growing technology and cleantech sectors.
 - Forecasts developed for the *MTC Goods Movement/Land Use Project* show manufacturing growth along the East Bay corridor averaging 0.66 percent per year over the longer term. At that rate, growth of manufacturing along the Inner East Bay corridor (Richmond to Union City) could be the following:

2006: 34,980 jobs (excluding biotechnology mfg.)

2030: 39,900 jobs

Growth: +4,920 jobs

+2.35 mil. sq. ft. space

~117,000 sq. ft. per year average absorption

The above assumes that manufacturing employment returns to 2006 levels (prior to the recession), and experiences modest long-term growth above prior levels.

- In addition to manufacturing growth, there is *demand for affordable, modern facilities to accommodate existing manufacturing activities* currently in old facilities and the changing needs of existing companies, particularly those that are growing. There also is anticipated to be demand for additional manufacturing space in central locations, to accommodate companies that will need to relocate from industrial space being converted to other uses, as the supply of centrally located industrial land continues to decline.
 - If 20 to 25 percent of existing manufacturing relocated, there would be demand for an additional 3.3-4.2 mil. sq. ft. in central areas, over and above the demand to accommodate overall growth.

Potentials for West Oakland

- Could be very successful in attracting smaller, urban manufacturing companies with affordable space options in West Oakland.
 - Could attract to existing building stock with improvements.
 - Larger buildings subdivided for smaller companies.
 - Improved functionality and electrical/utilities for older space. Manufacturers are more technologically advanced today. Energy efficiency also can be important.
 - Options with converted space for administrative/office/headquarters functions of mfg. companies along with product-testing and production/assembly space.
 - Could also attract with new development of light industrial/flex space.
 - Desirable as single tenant buildings for growing companies (such as in Alameda/Harbor Bay development for Peet's Coffee, Semifreddi's Bakery, and VF Outdoors).
 - Desirable as multi-tenant buildings for smaller companies.
 - Could create incubators where small start-ups share facilities and equipment. Could do for specific industry groups and/or for artisans and craftspeople.
 - Need to provide space options at competitive, affordable rents/prices for manufacturing uses. Need to be competitive with industrial space options.
- Issues/challenges:
- Contaminated sites can be costly to remediate.
 - Infrastructure improvements can add costs.
 - Land use policies should encourage and support light industrial/flex development. If policies are too permissive/flexible, owners could be encouraged to hold out for higher-density/higher-value developments and not invest in existing properties.
 - Policies should not allow residential development or live/work uses in designated business mix areas. Residential can increase land values and the potential for land use conflicts.

- Improvements needed to infrastructure in the business mix areas, particularly in the Mandela/West Grand Opportunity Area. Efforts to reduce crime also will be important.
- Steps needed to educate landowners about the potentials for manufacturing businesses and how to capture them.
- Positive steps to attract and support manufacturing businesses could be very beneficial.
- Could promote “Made in West Oakland” brand as a way to market local products, and attract manufacturers to West Oakland.
 - Examples from “SF Made”, an association of San Francisco-based manufacturers, including many food and beverage companies, apparel makers and fashion designers, bookbinders, and others. Has about 215 members employing over 3,000 people. Many are growing.
 - “Made in San Francisco” label is used to market products.
 - Association promotes local products and markets San Francisco locations to attract manufacturers. Also puts on seminars for businesses.
 - Has contracted for space in multi-tenant building for lease it to group of small SF Made businesses.

D. Construction

Industry Subsectors:

- Specialty trades contracting (masonry, framing, glass/glazing, roofing, electrical, plumbing, dry wall, painting, flooring, concrete, etc.)
- Building construction (residential, commercial, institutional)
- Infrastructure construction (roads, bridges, water and sewer, other infrastructure)

Business Functions:

At business location:

- Office/administrative support/marketing
- Storage of materials, supplies, tools, and equipment
- Staging back-up

Much of construction work is done at the project site, and work sites shift continuously.

Construction Sector in the East Bay and Region

The construction sector has a notable presence in Oakland and has been a significant driver of the East Bay economy. Although this sector was hit hard by the recent recession, it is projected to grow rapidly as the economy rebounds. (See Tables 15 and 16.)

- In the East Bay, construction supports 48,700 jobs currently (2010), accounting for 5.1% of total employment. That is down substantially from 74,400 construction jobs and 7.1% of total employment in 2006, prior to the recession. (See Table 15.)
- The combined impacts of the economic recession and the collapse of the housing market resulted in the East Bay losing 35 percent of its construction employment over the past four years. Alameda County lost 31 percent of its construction employment, or over 13,000 jobs.
- Construction employment represents a larger share of the economy in Alameda County and the East Bay than it represents of the regional and state economies overall, reflecting a higher concentration of construction businesses in the East Bay.
- There is a concentration of construction business activities along the East Bay I-80/880 corridor. About 50 percent of construction employment in Alameda County is located along the corridor and about 30 percent of construction employment in the East Bay overall (based on 2006 data).

**TABLE 15
CONSTRUCTION EMPLOYMENT IN THE CENTRAL BAY AREA**

	Alameda County /a/	East Bay: Alameda and Contra Costa Cos. /a/	San Francisco- Oakland- Fremont Metro Area	California
Construction Jobs, 2006	44,200	74,200	117,800	933,700
<i>Construction Share of All Jobs, 2006</i>	6.3%	7.1%	5.8%	6.0%
Construction Jobs, 2010	30,300	48,700	80,900	559,800
<i>Construction Share of All Jobs, 2010</i>	4.8%	5.1%	4.3%	3.9%
NOTE: Data for 2006 are prior to the recession; data for 2010 reflect the impact of the recession. Construction employment for counties was estimated by subtracting manufacturing employment from the total for goods-producing industries, as construction is not separately identified. A small amount of mining employment may be included.				
/a/ Construction employment along the East Bay I-80/880 corridor in 2006 included approximately 18,500 jobs from Richmond to Union City and 22,400 jobs from Richmond to Fremont.				
Source: California Employment Development Department (EDD), Annual Average Employment, March 2010 Benchmark				

- Construction businesses located along the I-80/880 corridor serve the central parts of the region, and the major business and population centers there. The concentration of construction business activities along the corridor indicates the importance of central locations with good freeway access to the nearby markets they serve. The central locations also provide good access to more outlying parts of the region, to the north, west, east, and south.
- Within the central East Bay corridor from Richmond to Union City, the group of specialty trades contractors accounts for the largest number of construction businesses (about 540 establishments in 2006) and the largest amount of construction employment (about 12,900 jobs in 2006). Businesses involved in the construction of buildings also have a notable presence (240 businesses with 3,300 jobs in 2006), along with businesses doing heavy and civil engineering construction of infrastructure (about 50 businesses with 2,300 jobs in 2006). (See Table 16.)
- Construction businesses have a notable presence in Oakland, with over 200 construction establishments accommodating over 4,000 jobs in 2006.

**TABLE 16
CONSTRUCTION EMPLOYMENT ALONG THE CENTRAL I-80/880 CORRIDOR, 2006**

NAICS	Type of Construction	I-80/880 Corridor, Richmond to Union City		
		Establishments	Employment	
			<u>Number</u>	<u>Percent</u>
236	Construction of Buildings	238	3,325	18.0%
237	Heavy and Civil Engineering Construction (Infrastructure)	47	2,265	12.2%
238	Specialty Trade Contractors	<u>538</u>	<u>12,919</u>	<u>69.8%</u>
	TOTAL	823	18,509	100.0%
	Average Employment per Establishment		22	
<u>Location Along Corridor</u>				
	Richmond to Emeryville	188	3,345	18.0%
	Oakland/Alameda	213	4,650	25.1%
	San Leandro/Hayward/Union City	<u>422</u>	<u>10,514</u>	<u>56.8%</u>
		823	18,509	100.0%
Source: California EDD data for I-80/880 corridor, from the <i>MTC Goods Movement/Land Use Project for the San Francisco Bay Area</i> . See <i>Task 3A Report, Defining Goods Movement Businesses/Industries With Demand for Central Corridor Locations</i> , December 2007, prepared for MTC by Hausrath Economics Group and The Tioga Group.				

- Construction and related business activities have a notable presence in West Oakland as well. There are numerous contractors in the area, carpentry and cabinet makers, and a number of businesses offering construction materials, equipment, and hardware products.

Key Factors Supporting the Construction Sector in the Central East Bay

- A large and growing region, with an increasing share of growth in the central areas and in the East Bay.
- Older building stock in the urban areas, supporting renovations and remodeling activity.
- Reuse of former military bases in the central area (Oakland Army Base, Alameda Naval Air Station, Treasure Island, Hunters Point) supporting construction activities.

- Dense infrastructure and freeway accessibility along the I-80/880 corridor, providing proximity to markets in the central areas and throughout the region.
- Agglomerations and linkages
 - Web of interconnected suppliers and wholesalers for building materials and equipment along the central corridors
 - Proximity to custom manufacturers and craftspeople for custom wood, iron, glass, and other products used in construction and remodeling.

Location Factors for Construction Businesses Within the Central Bay Area

- Proximity to markets served
- Proximity to suppliers and related businesses (i.e. custom manufacturers)
- Affordability of space/land
- Accessibility via central freeway routes
- Locations in industrial/business mix areas, free of land use conflicts

Building Product Types

- General Industrial Space
 - 1-story, typically
 - with some office space
 - with storage/staging space, in building and/or in yard
 - surface parking
 - on-site loading areas
 - older, industrial buildings, typically
- Light Industrial/Flex Space
 - 1-story, typically; potentially 1½ story with office upstairs
 - with some office space
 - storage, staging areas, in building and/or in yard
 - on-site loading areas
 - surface parking
 - existing buildings and new construction

Central Bay Area Locations With Industrial Land/Space

- ***Large Amounts of Industrial Land/Space in the Inner East Bay, Along I-80/880 Corridor from Richmond to Fremont***
 - Description of the industrial space market under the manufacturing sector, in the previous section, also applies for the construction sector.

- **Competitive Space Supply Focused in Surrounding Areas from Richmond to Hayward**
 - For construction uses, industrial and light industrial/flex space that is most competitive with that in Oakland is the supply in surrounding areas from Richmond to Hayward.
 - Although there are large amounts of industrial space in these areas, vacancies are low and the supply of industrial land has been declining. There also are older industrial areas in need of modernization and infrastructure improvement, including areas in Oakland.
- **Central Area Industrial Land Supply is Declining and Under Increasing Pressures** (see earlier discussion of industrial land supply trends under the manufacturing sector).
 - A declining central area industrial land supply could increase interest in industrial locations in West Oakland for construction uses, primarily smaller establishments and specialty trades contractors serving markets in the central areas.

Trends

- **Past**
 - The construction sector has been strong, and grew faster than the economy overall from 1990 through 2006. In Alameda County, construction employment grew at an average rate of 2.14 percent per year from 1990 through 2006.
- **2006-2010**
 - Since 2006, the combined impact of the economic recession and the collapse of the housing market have resulted in substantial declines in construction employment. Alameda County lost about 30 percent of its construction employment from 2006 to 2010, or over 13,000 jobs, while construction employment statewide experienced an even greater decline, with a loss of 40 percent.
- **Future**
 - In the nearer term, construction employment is anticipated to grow as the sector recovers from its losses due to the recession. The recent East Bay EDA study on Economic Development and Job Creation in the East Bay projects average growth of construction employment in the East Bay of 1.7 percent per year over the 10 years from 2008-2018.
 - Forecasts developed for the *MTC Goods Movement/Land Use Project* show long-term average construction employment growth of 1.68 percent per year from 2006-2035 for the East Bay I-80/880 corridor from Richmond to Fremont, including Oakland.
 - The factors and trends supporting longer-term construction sector growth in the Inner East Bay and Oakland include the following:
 - It will take a while to recover from the recession and to revive the housing market. The construction sector is projected to grow rapidly as the sector rebounds. The East Bay Economic Outlook published by East Bay EDA shows recovery of the construction sector extending to 2016, at which

- time construction employment is forecast to return to a level similar to that for year 2000.
- Residential construction is anticipated to resume and to provide substantial housing growth over the longer-term future as forecast for Oakland and other cities in the central Bay Area.
 - Non-residential construction is anticipated to increase, supported by significant institutional construction for hospital rebuilding and expansions to meet State seismic safety standards, and by commercial and industrial construction including that for base reuse in Oakland, Alameda, and San Francisco.
 - Substantial remodeling and rebuilding activities will continue on an ongoing basis to improve and modernize the increasingly valuable older building stock in the central areas.
 - Infrastructure construction is anticipated to continue through completion of the new Bay Bridge, freeway/bridge renovations, and projects funded by Federal stimulus monies, and could level off thereafter.
- A scenario of future construction employment along the Inner East Bay corridor from Richmond to Union City could be the following:

18,500 jobs in 2006

12,950 jobs in 2010 (assuming 30 percent decline from 2006)

16,650 jobs in 2016

21,000 jobs in 2030

+8,050 jobs over 20 years, 2010-2030

+5.2 mil. sq. ft. space over 20 years

~260,000 sq. ft. per year average absorption

Oakland and West Oakland could attract some of this growth. Some could be accommodated in existing facilities (in Oakland and elsewhere) of companies that contracted during the recession and retained their facilities (such as owner occupants). The above scenario assumes recovery from the recession and return to levels of employment in 2000 by 2016. Thereafter, growth is forecast to average 1.7 percent per year through 2030, consistent with the existing forecasts.

- In addition to construction sector growth, there could be *demand for facilities to accommodate existing construction activities* located in older space and to accommodate the changing needs of existing companies. There also could be demand for space/facilities to accommodate companies that move from centrally-located industrial areas being converted to other uses over time.
- If 20-25 percent of existing construction companies were to relocate, there would be demand for an additional +1.6-2.1 mil. sq. ft. in the central areas, over and above the demand to accommodate overall growth.

A cluster of construction and related businesses in West Oakland could enhance the attraction of the area to companies located elsewhere in the Inner East Bay.

Potentials for West Oakland

- Construction sector has been strong in West Oakland and still has a notable presence there. Can build on that as the sector recovers from the recession.
- Focus on smaller companies in the future, particularly specialty trades contractors and building/remodeling contractors. (The larger companies with need for large yards and heavy vehicle movements will locate elsewhere.)
- Could be attracted to existing building space, and to new, light industrial/flex space developed to meet their needs. Will seek affordable space, and primarily ground-floor space.
- There is the potential for a larger cluster of business activities in West Oakland that are involved in or related to construction. Locations in proximity could provide agglomeration benefits for related businesses. They also could provide broader identity and “branding” for the overall group of construction-related businesses in the area, of benefit for marketing and attracting clients.

In addition to construction sector businesses, the larger cluster could include the following (some of which are addressed in earlier sections of this report):

- Green/clean building and related companies
 - green building contractors
 - green building materials production/manufacturing (bricks, pavers, etc.)
 - energy-efficient modular buildings
 - energy-efficient building control systems
- Engineering, architecture, and design
- Environmental services
- Building materials sales (wholesale, retail)
 - granite, marble
 - lumber
 - hardware
 - green building materials and products
 - bathroom/kitchen fixtures
 - lighting

- Manufacturing, particularly custom products (including artisanal)
 - woodwork and cabinets
 - doors
 - windows
 - iron work (gates, railings)
 - fencing
 - sculptures

An expanded cluster of construction and related businesses in West Oakland could serve Oakland and the surrounding Inner East Bay.

E. Information Sector: Digital Media and Information Technology

Industry Subsectors:

- Motion picture/sound/video
 - Sound recording
 - Animation
 - Digital film-making
 - Visual effects
 - Video games

- Broadcasting
 - Internet music/radio

- Internet/web/data/software
 - Social media
 - Cloud computing
 - Internet/web hosting
 - Internet services/web design

- Telecommunications
 - Cellular/wireless
 - Wireless applications

- Publishing
 - Print media
 - Software

Business Types

While many businesses in this sector locate in office space and in downtown locations, there also are start-ups and smaller technology companies that are attracted to a grittier, more creative environment, as could be offered in West Oakland. The latter are the focus of this section.

Factors Supporting Innovative Technology

Firms in the Bay Area and East Bay

- Community of entrepreneurs and innovators.

- Mix of technical, creative, and artistic strengths of the workforce.

- Presence of wide range of technology companies and technology infrastructure and resources in the Bay Area.

Location Factors Within the Bay Area

- Urban locations
- Interesting, somewhat “gritty” environment
- Cluster effect; other similar entrepreneurs and tech companies nearby
- Image as location for innovative, tech firms
- Affordable space for start-ups
- Proximity to educated, urban workforce, particularly younger workers
- Good transportation/transit access
- Proximity to eating places and services

Building Product Types for West Oakland

- Studios/small offices/R&D space
 - Existing buildings, divided for multi-tenant use
 - Affordable/competitive rents
- Incubators/co-working space
 - Existing buildings
 - Collaborative, sharing of work space
 - Desks and offices can be rented monthly; often to “members” of the co-working group
- Individual buildings/campus locations
 - Potential for smaller buildings that offer own identity and “campus” for start-ups that have grown into larger, mid-size companies
 - Build-to-suit new or rehab of existing

Digital Media and Information Technology Businesses In the Inner East Bay and San Francisco

Employment data are for the information sector overall. The potentials of interest for West Oakland represent a portion of those totals.

- The information sector overall supports 23,800 jobs in the East Bay, accounting for 2.5 percent of total employment. About 14,000 of those jobs are located in Alameda County. A share of those jobs are in Oakland. An example is Pandora Media, the internet radio service, located in downtown office space. (See Table 17.)

**TABLE 17
INFORMATION SECTOR EMPLOYMENT IN THE CENTRAL BAY AREA**

	Alameda County	East Bay: Alameda & Contra Costa Cos.	San Francisco	San Francisco- Oakland- Fremont Metro Area	Santa Clara County	California
Jobs, 2006	16,700	30,100	18,300	69,100	37,400	466,000
<i>Info Share of All Jobs, 2006</i>	2.4%	2.9%	3.5%	3.5%	4.3%	3.1%
Jobs, 2010	14,000	23,800	19,200	62,300	43,800	429,000
<i>Info Share of All Jobs, 2010</i>	2.2%	2.5%	3.7%	3.3%	5.2%	3.0%
Source: California Employment Development Department (EDD), Annual Average Employment, March, 2010 Benchmark						

- The information sector represents a larger share of employment in San Francisco, 3.7 percent of total jobs. Information sector jobs are primarily located in Downtown San Francisco and in the South of Market. South of Market locations are the most similar to what is envisioned for parts of West Oakland
 - In addition to space in older industrial buildings, the South of Market includes new product types, attractive to start-ups.
 - 5M: existing buildings with an open, campus-like work environment to accommodate a community of tenants, including entrepreneurs, artists, and tech companies. Includes co-working, start-up incubators.
 - Co-working space: space for groups of like individuals and companies that collaborate and share resources and information. Examples include a co-working start-up incubator for tech companies, co-working space for slightly more established companies, a membership-based tool shop for inventors, and co-working for artists.

Trends

- **2000-2010**
 - Business activity and employment in the information sector was at its peak at the height of the dot.com boom in 2000.
 - After declines, the sector overall remained relatively stable from 2003-2007, after which there have been declines due to the recent economic recession.
 - Longer-term trends for both the state and region differ among subsectors.
 - There have been declines in print publishing and in telecommunications.
 - There has been notable growth of software publishing, internet service providers/web hosting/data processing, and other information services

including internet publishing and broadcasting and web search portals. This group includes activities of types that could consider West Oakland locations in the future.

- There also has been growth of the motion picture and sound recording industries and of broadcasting (excluding internet broadcasting).

- **Future**

- Growth is forecast for the technology, internet-related, and software publishing subsectors. There also could be some growth in the motion picture/sound/video group and in broadcasting.
- In the East Bay (Alameda and Contra Costa counties), about 11,600 jobs of 27,800 total information sector jobs were in the above subsectors in 2008. The CA EDD forecasts East Bay growth for this group at 1.9 percent per year from 2008 through 2018. Growth had occurred at stronger rates prior to the recession. It is reasonable to assume a longer-term growth rate of 2 percent per year through 2030.

2008/2010: 11,600 jobs in East Bay information technology, internet-related, software publishing, and video/sound and broadcasting groups
2030: 18,000 jobs

Growth: +6,400 jobs
+2.24 mil. sq. ft. space
+102,000 sq. ft. annual average absorption

The above group of business activities includes start-ups and other businesses that could consider locations in West Oakland in the future. Many will likely seek downtown locations, and/or locations in other East Bay cities. Thus, the potentials for West Oakland include only a portion of the growth that is forecast above.

- Other business activities in the information sector, with about 16,200 jobs in 2008 and including telecommunications (about 12,200 jobs) and print publishing (about 4,000 jobs) are not anticipated to grow substantially, and most are unlikely to seek locations like those offered in West Oakland.
- There could be demand for additional space for publishing activities in a central location like West Oakland in the future, to accommodate East Bay companies that might need to relocate from more costly space or space being converted to other uses.
 - If 20 percent of existing print publishing activities relocated, there could be demand for about 360,000 sq. ft., over and above the demand to accommodate overall growth.

Potentials for West Oakland

- Could be successful in attracting start-ups and smaller technology companies with affordable space options in a somewhat “gritty” urban environment in West Oakland.

- Could attract to existing building stock, with improvements.
 - Larger buildings subdivided for small companies.
 - Improved functionality of older buildings and support for contemporary technology (e.g. grounded outlets, network infrastructure, high speed lines).
 - Some buildings with an open, campus-like environment.
 - Should include start-up incubator space and co-working space, where start-ups can share facilities and equipment.
 - Studios and small offices for some businesses.
- Could combine above improvements and facilities to attract information-sector start-ups
 - A mix of technical, creative, and artistic talents could be beneficial and attractive to each group.
 - All of these groups seek relatively affordable space.
- Could also attract with new development of office/flex space
 - Desirable as single tenant building for growing companies.
 - May be attractive to as multi-tenant building if interesting space.
- Improvements needed to infrastructure and amenities in business mix areas in parts of Mandela/West Grand Opportunity Area. Efforts to reduce crime and improve image also will be important.
- Efforts to “establish” the area as a location for technology start-ups and create an image as such could be important for attracting tenants. “West Oakland” should become the “South of Market” of Oakland and Emeryville. Could benefit from:
 - Branding
 - Attracting initial tenants who like the area and help spread the word
 - Renovating buildings near each other to create a cluster that can attract additional businesses

Summary of Market Sectors and Potentials

Summaries of the market sectors highlight the levels of business activity and employment that each supports currently, and the potentials for growth of each sector in the future.

Shares of the Economy Currently

Among market sectors, the more established sectors of urban manufacturing and construction support the largest amounts of business activity and employment currently, as summarized in Table 18. The relatively large size of the urban manufacturing sector should be noted as there is often the perception that manufacturing industries are “gone”, although that is not the case in the Bay Area, East Bay, and I-80/880 corridor including Oakland.

The newer sectors, focused on technology industries and the clean/green economy, support smaller amounts of business activity and employment currently and represent relatively small shares of the economy today.

Potentials for Future Growth

There is growth forecast for all five market sectors. The highest rates of growth are anticipated in the technology sectors. (See Table 19.)

The emerging clean technology and energy industries, in particular, have strong growth potentials. However, it is difficult to accurately forecast growth for emerging industries, as it will depend on the extent and success of scientific discoveries as well as the extent of federal spending for research and business development. The amount of potential growth is largest for the clean economy/cleantech sector, although that forecast is for the largest geographic area, the metro area (MSA) covering five Bay Area counties. However, the Inner East Bay has already established itself as the location for leading research efforts supporting this sector.

The life sciences/biotechnology sector also has substantial growth potential. This sector is very competitive, however, with a large pipeline of entitled projects and already-established marketing partnerships of city, university, and developer representatives.

Notable growth is forecast for urban manufacturing and construction, with demand focused on the East Bay I-80/880 corridor including Oakland. West Oakland can be an attractive location for smaller businesses in these sectors with competitively-priced land/space. There also is potential to capture relocations of existing manufacturing and construction businesses in the future.

Growth of the digital media and information technology sector also is forecast, focusing on the technology, internet-related, software, and video/sound groups. These groups include start-ups and other smaller businesses that could be attracted to an interesting, “gritty”, older industrial area like West Oakland.

**TABLE 18
MARKET SECTORS: SHARES OF ECONOMY IN 2010
(2010 Employment for Sectors and Shares of Total Employment)**

Market Sectors	East Bay I-80/880 Corridor /a/	Alameda County	East Bay: Alameda and Contra Costa Cos.	Central Bay Area (EB/SF/SM) /b/	San Francisco- Oakland- Fremont Metro Area /c/
Life Sciences/Biotechnology	16,190 2.5% Ala. Co. 1.5% E. Bay	-	-	37,000 2.1% Metro Area	45,910 2.6%
Clean, Green Economy/ Clean Technology	-	-	-	-	51,800 2.7%
Manufacturing	36,970 5.8% Ala. Co. 3.9% E. Bay	60,500 9.4%	78,600 8.3%	-	116,100 6.4%
Construction /d/	12,950 2.0% Ala. Co. 1.4% E. Bay	30,300 4.8%	48,700 5.1%	-	80,900 4.3%
Digital Media/Info. Technology	-	14,000 2.2%	23,800 2.5%	-	62,300 3.3%
<p>NOTE: Employment in 2010 is lower than prior years due to the impact of the recession. Increases in employment are anticipated as the economy recovers, in addition to longer-term growth potentials. Employment data are presented for geographic areas as available for each sector. There is some overlap of employment between sectors, such as between the clean economy/clean technology sector and the manufacturing and construction sectors.</p> <p>/a/ I-80/880 Corridor, Richmond to Union City.</p> <p>/b/ East Bay I-80/880 Corridor (Richmond to Union City), San Francisco, and North and Central San Mateo County (county line south to Redwood Shores).</p> <p>/c/ San Francisco-Oakland-Fremont Metropolitan Statistical Area, including five counties: Alameda, Contra Costa, San Francisco, San Mateo, and Marin.</p> <p>/d/ Construction sector is down significantly in 2010, due to the recession and housing market collapse, and was hit harder than the other sectors in this table. For example, in 2006, Alameda County construction had 44,200 jobs with a 6.3% share and East Bay construction had 74,200 jobs with a 7.1% share.</p> <p>Source: See earlier tables in the market sector assessments.</p>					

**TABLE 19
MARKET SECTORS: GROWTH POTENTIALS 2010-2030
(Potential Growth of Employment and Space)**

Market Sector	Geographic Area for Forecasts	Growth Potentials
Life Sciences/Biotechnology	Central Bay Area (EB/SF/SM) /a/	37,000 - 55,000 jobs (+2%/yr) +18,000 jobs +7.65 mil. sq. ft. space <ul style="list-style-type: none"> • Substantial growth potential • Very competitive market context with large pipeline of entitlements and existing marketing partnerships targeted at biotech.
Clean/Green Economy/Clean Tech. (Forecasts exclude some business types and include segments of most relevance to this effort)	San Francisco-Oakland-Fremont Metro Area /b/	36,150 to 77,080-107,830 jobs (+3.9 - 5.3%/yr) +40,930 - 71,680 jobs +16.4 - 28.3 mil. sq. ft. space <ul style="list-style-type: none"> • Strong growth potential • Difficult to forecast since emerging sector • Growth somewhat dependent on federal research spending and extent of scientific discoveries • Share of growth will occur in downtown office space
Urban Manufacturing	East Bay: I-80/880 Corridor /c/	34,980 - 39,900 jobs (+0.66%/yr) +4,920 jobs +2.35 mil. sq. ft. space Potential relocations ~3.3 - 4.2 mil. sq. ft. space <ul style="list-style-type: none"> • West Oakland is an attractive location if can provide space/land at competitive rents/prices
Construction /d/	East Bay: I-80/880 Corridor /c/	12,950 - 21,000 jobs (+1.7%/yr) +8,050 jobs +5.2 mil. sq. ft. space Potential relocations ~1.6 - 2.1 mil. sq. ft. <ul style="list-style-type: none"> • West Oakland is already an attractive location for construction; can remain so with competitively-priced space/land • Larger cluster of construction and related businesses could be successful
Digital Media/Info. Tech. (Forecasts focus on growing business types and exclude those less relevant to this effort)	East Bay: Alameda and Contra Costa Cos.	11,600 - 18,000 jobs (+2%/yr) +6,400 jobs +2.24 mil. sq. ft. space Potential relocations ~360,000 sq. ft. <ul style="list-style-type: none"> • Smaller businesses and start-ups most likely • Could be attracted to interesting, "gritty" older industrial area environment • Share of growth will occur in downtown office space
<p>NOTE: Growth potentials forecast for different geographic areas based on available data for market sectors. The larger the area forecast, the more competition for the growth identified. West Oakland will compete with other locations within each geographic area.</p>		
<p>/a/ East Bay I-80/880 Corridor (Richmond to Union City), San Francisco, and North and Central San Mateo County (county line south to Redwood Shores). /b/ San Francisco-Oakland-Fremont Metropolitan Statistical Area (MSA), including five counties: Alameda, Contra Costa, San Francisco, San Mateo, and Marin. /c/ I-80/880 Corridor, Richmond to Union City. /d/ Construction sector is down significantly in 2010, due to the recession and housing market collapse, and was hit harder than the other sectors above.</p>		
<p>Source: See earlier tables in the market sector assessments.</p>		

STRATEGY FOR CAPTURING POTENTIALS, AND PARAMETERS FOR SPECIFIC PLAN ALTERNATIVES

The assessments of market segments above identify and describe potentials for business and job growth and associated new development in West Oakland opportunity areas designated for business mix and light industrial uses. Achievement of those potentials will depend on a successful economic and real estate development strategy for opportunity areas and opportunity sites within each area.

In the next steps of the planning process, market potentials will be evaluated in the context of physical characteristics and capacities of opportunity areas and sites to identify and evaluate development alternatives. As input to that work, this section:

- Summarizes the building types supported by business mix and light industrial uses and discusses financial feasibility;
- Identifies conditions in the areas that currently constrain development and need to be improved to attract new uses, business activity, and jobs; and
- Identifies aspects of a development and revitalization strategy that will be important for achieving potentials.

Building Product Types

The building product types that could be options for the industrial parts of West Oakland (Opportunity Areas 1 and 3) are summarized in Figure 5. The chart in Figure 6 summarizes the market sectors that could support the different types of building space and development. The range of building types for the different market sectors reflects differences among businesses within each sector, in terms of business functions performed (manufacturing, R&D, office administration, etc.) and business age and size (i.e. small start-up, mature smaller business, mid-size business). The clean economy/clean technology sector also includes businesses from several different industry groups.

The building types reflect differences in the physical characteristics of buildings, the types of improvements within the space, and the amenity levels at the site and in the surrounding area. Generally, they are ordered in the charts so that the building types listed first in Figure 5, and on the left side of Figure 6, are lower density with fewer interior building improvements and amenities. They provide space that can be supported by businesses with lower rent-paying abilities. The building types listed last and on the right are higher density with more interior improvements and amenities, and more costly structured parking. The space in those building types is more costly to build and must be supported by businesses with greater rent-paying abilities.

The building types apply for existing buildings in the areas and for new construction that could occur on opportunity sites, as described in Figure 5 (see the items in italics at the end of the description of each product type). Generally, the first four building types listed could apply to

FIGURE 5
BUILDING PRODUCT TYPES FOR
BUSINESS MIX / LIGHT INDUSTRIAL USES IN WEST OAKLAND

- ◆ **Industrial/Manufacturing Space**
 - 1-story, typically
 - May include office space
 - May require clear heights
 - May require storage/staging space in building and/or yard
 - On-site loading areas; loading docks/doors
 - Surface parking
 - *Older, industrial bldgs. typically*
 - *Larger, older bldgs. divided up for smaller uses*
- ◆ **Light Industrial/Flex Space**
 - 1-2 stories
 - Space adaptable for production, assembly, office, and/or storage/staging functions, as well as R&D/test product development
 - Can include studios and small offices
 - Can include yard space and on-site loading areas
 - Can include clear heights and loading doors
 - Surface parking
 - *Existing buildings; larger ones divided for multi-tenant use*
 - *New construction*
- ◆ **Incubators/Shared Facilities**
 - Shared facilities; small spaces
 - Shared equipment often
 - Can include studios, offices, production space, labs
 - Collaborative environment
 - May include assistance in business management and connection to venture capital
 - Can include co-working space, with spaces/desks/offices rented short-term
 - *Reuse of existing buildings, typically*
- ◆ **R&D/Flex Space**
 - 1-3 stories
 - Space adaptable for R&D, office, and manufacturing functions
 - Labs can require special power, cooling, and/or flooring as well as back-up generators
 - Some amenities, typically
 - Surface parking, in most cases
 - *New construction, primarily*
 - *Reuse of existing buildings*
- ◆ **Individual Buildings/Campus**
 - Buildings that offer own identity
 - Can include office, manufacturing, and R&D functions
 - Often accommodate start-ups that have grown into larger companies
 - Lower-rise; 1-3 stories; surface parking
 - Mid-rise; 4-5 stories; structured parking
 - On-site amenities
 - *New construction, most likely*
- ◆ **R&D/Life Sciences, Mid-Rise**
 - Buildings with life science improvements (wet labs, offices, and possibly specialized mfg. facilities)
 - Most with back-up generators and ownership familiar with the industry
 - May require special power, cooling, and/or flooring
 - 4 or more stories
 - Structured parking
 - On-site amenities
 - *New construction*

**FIGURE 6
BUILDING PRODUCT TYPES SUPPORTED BY MARKET SECTORS**

Industry Market Sectors	Building Product Types					
	Industrial/ Manufacturing Space	Light Industrial/ Flex Space	Incubators/ Shared Facilities	R&D/ Flex Space	Individual Buildings/ Campus	R&D/ Life Sciences, Mid-Rise
Life Sciences/ Biotechnology			X	X	X	X
Clean Economy & Clean Technology	X	X	X	X	X	X
Small, Urban Manufacturing	X	X	X		X	
Construction and Related	X	X				
Digital Media/ Information Technology		X	X	X	X	

existing buildings. Some apply to new construction as well. The building types listed last typically reflect new construction.

Mix of Types Needed to Attract Market Sectors

Based on the market assessments above, a mix of building products would be needed to attract and support business types from each of the five market sectors with growth potentials for West Oakland. The differences among building types in densities, development costs, space rents, and land values suggest a subarea strategy that encourages different types of development and business activities in different parts of the opportunity areas, particularly the Mandela/West Grand Opportunity Area.

Financial Feasibility Depends On Extent of Cleanup, Infrastructure, and Other Costs Not Required At Competitive Locations

Where there is market demand, the types of development and building space identified for each potential market segment could capture revenues/rents that are competitive with other similar space within the relevant market areas. The building types are *financially feasible* to the extent that the space (existing and new) can be provided/developed at costs that are comparable to costs at other competitive locations. Buildings of these types currently exist elsewhere in the relevant

market areas. The building types may not be financially feasible with “extraordinary” costs not required in other locations. Such extraordinary costs could include:

- costs for environmental cleanup;
- costs for infrastructure and other area-wide improvements; and/or
- potentially, costs for extensive improvements and upgrades to modernize existing buildings (depending on the new use).

Extraordinary costs of these types would first reduce land values, reducing the return to property owners as a result of the higher costs. The higher costs could be greater than land values, making projects infeasible. In those cases, the improvements with extraordinary costs would require public sector and/or area-wide financial participation and assistance if development is to proceed.

Existing Conditions Constrain Development/Revitalization and Need to Be Addressed

While there are market potentials for business mix and light industrial uses, conditions in West Oakland could continue to constrain business revitalization and job development if not improved. The following are constraints to be addressed *before* significant change can occur in the older industrial areas, particularly those in the Mandela/West Grand Opportunity Area.

◆ *Inadequate Infrastructure and Streetscape*

Infrastructure investments could improve:

- streets and streetscape including sidewalks, curbs and gutters, street paving, and street lighting;
- circulation and accessibility in some locations in the Mandela/West Grand Area;
- utilities as needed to assure adequate water and wastewater services for manufacturing and R&D/life sciences uses and to provide contemporary telecommunications access; and/or
- removal of rails and spurs no longer in use in the area.

It also could be beneficial to add amenities such as street trees in parts of the area where life sciences and technology uses are desired.

The City of Oakland recently completed the *West Oakland Public Infrastructure Assessment and Recommendations Report* that examines infrastructure conditions and deficiencies in West Oakland’s industrial areas. The assessment recommends

infrastructure improvements and identifies the likely magnitudes of costs. That effort provides a basis for identifying infrastructure and streetscape needs and improvements in the next phase of the Specific Plan work.

◆ ***Environmental Contamination of Sites***

An area-wide strategy could be useful in encouraging owners to undertake cleanup and identifying options for funding costly efforts.

◆ ***Safety Concerns and Poor Image***

Crime in the area and the reputation for crime adversely affect West Oakland's image and deter business development. A strategy is needed to improve safety and reduce crime and to build an improved image as a business location. While both safety and image will improve as activity and development increase in the area, efforts are needed to initially address these issues so as to begin to change perceptions and attract new uses.

Maintenance and upkeep also are adversely affecting image. There are poorly maintained properties and public rights-of-way in the area, and open-yard recycling uses that are not desirable neighbors.

Other Aspects of a Revitalization/Development Strategy for Achieving Market Potentials, and Input for Plan Alternatives

The following outlines aspects of a strategy for encouraging economic and real estate development in the older industrial areas of West Oakland so as to capture market potentials for business and job growth. These aspects are *in addition to* the need to improve existing conditions that constrain development and revitalization, as described above.

◆ ***Recognize That Revitalization and Development is a Long-term, Evolutionary Process***

The overall strategy should be to improve the areas, remove constraints to development and business growth, and undertake improvements that make the area more competitive and more attractive to businesses. The intent is to "lay the ground work" in ways that encourage the market to respond. Most likely, the process will go slowly, will need nurturing, and will build up over time. It could easily be 20 years or more before substantial changes occur.

As identified in the first section of this report, most business and job growth is from start-ups and from existing businesses that grow and change over time. That is likely to be the case in West Oakland as well. While the relocation of a large, existing company or institution to the area would be great, it is not the most likely scenario, particularly in the early years. Attention needs to be focused on new start-ups and smaller businesses already in Oakland and nearby cities.

◆ ***Focus on Reuse of Existing Buildings, Particularly Initially***

The existing building stock provides a resource for attracting new businesses, particularly initially. Existing buildings are already there and can provide space options in the nearer term. As much as possible, existing buildings should be retained and reused for new business uses. Larger buildings can be subdivided for smaller tenants. Existing buildings add character and uniqueness. Reuse and the “gritty” industrial feel it can provide are attractive to many businesses, particularly smaller businesses and new uses for the area. For light industrial businesses, reuse is likely to be less costly than new construction. Reuse and small-scale infill can “set the stage” for redevelopment of larger opportunity sites nearby.

Industrial buildings that may contain illegal live/work or residential uses should be returned to business use as much as possible. *Zoning rules that prohibit residential and live/work uses in the Business Mix and Light Industrial zones should be enforced.* The intent is to focus on making the business areas as attractive as possible to business activities and the jobs they support. (Conversions to work/live use are allowed under specific conditions.)

◆ ***Identify Other Location Options for Heavier Industrial Uses***

Consideration is currently being given to location options on the former Oakland Army Base Area for two recycling businesses now located in West Oakland. Their relocation could provide sites for new development and new uses within West Oakland. It also could improve the desirability of West Oakland locations in the vicinity.

There also is a need to identify location options for other, still-viable heavier industrial and truck-intensive businesses in West Oakland, that are more appropriately located outside the I-880 freeway boundaries. New uses of these types are no longer permitted in the business mix areas, and existing businesses there cannot expand in West Oakland. Heavier industrial uses that rent could be displaced as the area improves and new uses are attracted. Factors to consider in identifying location options include the need for a central location, good freeway accessibility, and proximity to markets served, including other businesses in West Oakland.

◆ ***Undertake Proactive and Coordinated Marketing Approach***

A proactive marketing approach will be needed to promote West Oakland business locations and attract new uses. Both the public and private sectors need to be actively involved and consistent, in terms of the uses and development they envision for the area.

Strategies for attracting different market sectors are identified in the analyses of market potentials in the previous sections. The following are potential options for marketing work, depending on the market sectors to be emphasized:

- Pursuing the possibility of joining the partnership (Emeryville, Berkeley, Wareham, U.C. Berkeley and LBNL) for attracting life sciences growth to the Inner East Bay.
- Establishing coordination with U.C. Berkeley and LBNL regarding clean tech and energy research and development.
- Continuing to work through the East Bay Green Corridor partnership to market West Oakland and create identity for clean/green businesses in building types not now available in Oakland.
- Promoting and branding a cluster of construction and related businesses in West Oakland, potentially including specialty trades and building contractors, building materials sales, custom manufacturing, and engineering/architecture, and environmental services.
- Promoting and branding small manufacturing business activities that produce a wide range of products “made in West Oakland”, including specialized and custom products, artisanal production and industrial arts, and technology and related products.
- Holding events and promoting West Oakland as an interesting and “gritty” urban location for start-ups and other small companies in the digital media, software, and information technology industries.

◆ ***Build on Existing Business Activities Already Located in West Oakland***

Revitalization and development of industrial areas should support and build on the strengths of existing business activities in West Oakland. There are both existing and new types of businesses that emerged in West Oakland over the past decade, many of which are part of the market sectors assessed herein. As described in the local context in Appendix 2, these include businesses of the following types: custom manufacturing (foods, beverages, apparel, printing, furniture/woodwork, metals/plastics, etc.); construction, building materials, and related activities; creative businesses (industrial arts, arts studios, film/sound/photo, digital arts and media, etc.); and architecture/engineering/ professional services and related businesses. The future strategy should include land uses, building types, and infrastructure improvements that support existing businesses and encourage new ones to locate and expand in West Oakland. Existing businesses are assets for attracting new businesses, particularly initially.

◆ ***Educate Property Owners and Encourage Them to Be Realistic About Market Potentials and Land Values***

Space and land in West Oakland needs to be available at competitive prices and rents for uses from which there is market demand. Initially, West Oakland may need to be priced just below the competition to help in attracting new uses not yet in the area. Unrealistic property owner expectations will only delay development and revitalization if owners hold out for higher rents and prices than can be supported.

◆ ***Consider Subarea Approach for Development in Mandela/West Grand Opportunity Area***

It will be useful to consider development scenarios and capacities for business mix uses in the Mandela/West Grand Opportunity Area, evaluating the magnitudes of development and reuse that could occur and the strengths and weaknesses of sites and subareas for attracting the different market sectors. It is likely that the capacity is large, and the area could accommodate potentials from several market sectors. As the sectors differ in densities of development and the rents and land prices they support, revitalization may be facilitated by encouraging different sectors and/or different types of uses and development in different subareas. The alternative of flexibility throughout could mean that many property owners hold out for the higher-value/higher-density uses, and that less change occurs or it occurs much more slowly.

◆ ***Land Use Policy and Zoning Should Provide Direction and Be Clear***

City regulatory land use policies set “the rules” for what is permitted, conditionally permitted, and prohibited in an area, and they define the parameters for allowable new development. The policies provide direction to the private sector. While allowing some flexibility, the more definitive the rules, the more clarity and predictability there is for property owners and developers. The recent approval of the Citywide Industrial Land Use Policy and the adoption of new industrial zoning regulations for Business Mix areas now provide more direction and predictability for the use of industrial/business land in West Oakland. It is important that there is the political will to continue to support the new policies. The policies can be further refined as needed, consistent with the WOSP once adopted.

EMPLOYMENT OPPORTUNITIES IN BUSINESS MIX/LIGHT INDUSTRIAL MARKET SECTORS

The occupational profiles for jobs in the market sectors with potentials for West Oakland show that the large majority are good-paying jobs with training and advancement opportunities. The life sciences and information sectors have a large share of jobs in the professional, technical, and

scientific occupations, while the majority of jobs in the urban manufacturing and construction sectors are in the production and construction occupations. The clean economy sector includes jobs in a variety of different occupations. Together, the sectors offer good jobs up and down the skills/education ladder.

Occupational profiles for each of the market sectors are summarized below and presented in Tables 20 and 21. Table 20 identifies the occupational distributions for jobs supported by each market sector. Table 21 shows the average hourly wages and education/training levels for jobs in each occupation. Tables in Appendix 1 at the end of the report provide background on the occupational distributions for industries within market sectors.

Higher-Wage/Higher-Education Occupations Dominate Jobs in the Life Sciences and Information Sectors

Life Sciences/Biotechnology Sector

Jobs in this sector are concentrated in the professional, technical and scientific occupations (over 50 percent of jobs in life, physical, and social sciences, computer and math, and engineering occupations). A large share of jobs also is involved in business management and financial operations (22 percent), and in office and administrative support occupations (about 10 percent). Life sciences businesses that include manufacturing operations also employ production workers (about 10 percent of jobs in the sector, and 30 percent of jobs for pharmaceutical manufacturers).

The majority of jobs in this sector are in the higher-wage/higher-education occupations (about 77 percent). Within these occupations, there also are jobs for people with vocational education, on-the-job training, and/or relevant, work experience. About 21 percent of jobs in this sector are in the middle-wage occupations, that pay well and employ people without college educations.

Information Sector: Digital Media and Information Technology

The largest share of jobs in this sector (about 40 percent) are in two occupation categories, computer and math occupations and arts, design, entertainment, sports, and media occupations. In addition, about 20 percent of jobs are involved in business management and operations, and about 16 percent in office and administrative support occupations. There also are jobs involved in sales, production (print publishing segment), and installation and repair (telecommunications segment).

The majority of jobs in the sector (about 60 percent) are in the higher-wage occupations, and many require a college education. However, this group also includes positions that provide on-the-job training for employees without college educations. Most of the rest of the jobs are in good-paying, middle-wage occupations for people with less than a college education.

**TABLE 20
OCCUPATIONAL DISTRIBUTIONS FOR BUSINESS MIX/LIGHT INDUSTRIAL MARKET SECTORS**

SOC Code	Occupation Title	Life Sciences/ Biotechnology	Clean/Green Economy	Urban Manufacturing	Construction	Digital Media / Information Technology
Higher Wage / Higher Education Occupations						
11	Management	14.4%	5.7%	7.3%	4.9%	12.9%
13	Business and Financial Operations	8.1%	5.8%	3.3%	3.2%	7.9%
15	Computer and Math	10.5%	2.1%	2.5%	0.2%	13.5%
17	Architecture and Engineering	13.0%	5.7%	5.1%	0.8%	1.0%
19	Life, Physical, and Social Science	27.7%	2.3%	1.6%	0.1%	0.7%
21	Community and Social Services	0.3%	1.4%	0.0%	0.0%	0.0%
23	Legal	0.7%	0.7%	0.1%	0.0%	0.3%
25	Education, Training, and Library	0.1%	0.4%	0.0%	0.0%	0.1%
27	Arts, Design, Entertainment, Sports, and Media	1.1%	0.6%	0.7%	0.0%	24.5%
29	Healthcare Practitioners and Technical	1.1%	1.2%	0.0%	0.0%	0.0%
	Subtotal	76.9%	25.9%	20.6%	9.1%	60.9%
Middle Wage Occupations / Less than College Education						
33	Protective Service	0.3%	4.5%	0.0%	0.0%	0.0%
43	Office and Administrative Support	9.6%	14.1%	11.2%	9.7%	16.3%
47	Construction and Extraction	0.1%	7.2%	0.8%	70.8%	0.3%
49	Installation, Maintenance, and Repair	1.5%	6.2%	3.5%	5.7%	7.3%
51	Production	9.1%	15.9%	51.6%	1.0%	1.5%
53	Transportation and Material Moving	0.6%	19.3%	8.1%	2.0%	1.1%
	Subtotal	21.2%	67.2%	75.3%	89.2%	26.6%
Lower Wage Occupations						
31	Healthcare Support	0.4%	0.3%	0.0%	0.0%	0.0%
35	Food Preparation and Serving-Related	0.0%	0.4%	0.3%	0.0%	1.4%
37	Building and Grounds Cleaning and Maintenance	0.4%	0.9%	0.4%	0.2%	0.2%
39	Personal Care and Service	0.0%	1.2%	0.0%	0.0%	2.3%
41	Sales and Related	1.1%	3.4%	2.5%	1.5%	8.6%
45	Farming, Fishing, and Forestry	0.1%	0.7%	0.9%	0.0%	0.0%
	Subtotal	1.9%	6.9%	4.1%	1.7%	12.5%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%

Sources: State of California, Employment Development Department; Brookings Institution; and Hausrath Economics Group.

TABLE 21
OCCUPATIONAL PROFILES: WAGES AND EDUCATION/TRAINING LEVELS
Oakland-Fremont-Hayward Metropolitan Division (Alameda and Contra Costa Counties)

SOC Code	Occupation	Median Hourly Wage (2011) ^a	Education / Training Levels ^b
11	Management	\$52.98	Bachelor's Degree + Experience (65%); Work Experience (17%); Bachelor's Degree (17%)
13	Business and Financial Operations	\$35.18	Bachelor's Degree (77%); Bachelor's Degree + Experience (12%); Long-term OJT (9%)
15	Computer and Mathematical	\$40.91	Bachelor's Degree (75%); Associate Degree (22%)
17	Architecture and Engineering	\$42.77	Bachelor's Degree (75%); Associate Degree (17%); Post-Secondary Voc. Ed. (8%)
19	Life, Physical, and Social Science	\$36.12	Master's Degree (31%); Doctoral Degree (31%); Bachelor's Degree (28%); Associate Degree (10%)
21	Community and Social Services	\$24.18	Master's Degree (43%); Bachelor's Degree (36%); Moderate-term OJT (22%)
23	Legal	\$44.66	LLD/MD Degree (59%); Associate Degree (22%); Bachelor's Degree (11%)
25	Education, Training, and Library	\$26.02	Bachelor's Degree (58%); Short-term OJT (17%); Master's Degree (11%)
27	Arts, Design, Entertainment, Sports, and Media	\$23.49	Bachelor's Degree (47%); Long-term OJT (32%); Bachelor's Degree + Experience (13%)
29	Healthcare Practitioners and Technical	\$43.53	Associate Degree (52%); Post-Secondary Voc. Ed. (16%); LLD/MD Degree (16%)
33	Protective Service	\$23.18	Short-term OJT (53%); Long-term OJT (30%); Moderate-term OJT (10%); Work Experience (7%)
43	Office and Administrative Support	\$19.19	Short-term OJT (49%); Moderate-term OJT (40%); Work Experience (7%)
47	Construction and Extraction	\$27.79	Moderate-term OJT (50%); Long-term OJT (40%); Work Experience (10%)
49	Installation, Maintenance, and Repair	\$25.39	Long-term OJT (48%); Post-Secondary Voc. Ed. (34%); Work Experience (8%); Moderate-term OJT (7%)
51	Production	\$16.10	Moderate-term OJT (50%); Long-term OJT (20%); Short-term OJT (19%)
53	Transportation and Material Moving	\$16.07	Short-term OJT (75%); Moderate-term OJT (17%)
31	Healthcare Support	\$14.55	Short-term OJT (66%); Moderate-term OJT (28%)
35	Food Preparation and Serving-Related	\$9.58	Short-term OJT (83%); Long-term OJT (7%); Work Experience (7%)
37	Building and Grounds Cleaning and Maintenance	\$13.58	Short-term OJT (92%); Work Experience (8%)
39	Personal Care and Service	\$11.43	Short-term OJT (73%); Post-Secondary Voc. Ed. (16%); Bachelor's Degree (7%)
41	Sales and Related	\$14.70	Short-term OJT (58%); Moderate-term OJT (20%); Work Experience (14%)
45	Farming, Fishing, and Forestry	\$10.36	Short-term OJT (92%); Work Experience (8%)

^a First quarter 2011, from Occupational Employment Statistics (OES) Survey results, released May 2011

^b From 2008 - 2018 Occupational Employment Projections, March 2009 benchmark. Only the most common education/traning levels for each occupation; detail will not add to 100 percent.

Sources: State of California, Employment Development Department and Hausrath Economics Group.

Urban Manufacturing and Construction Sectors Offer Stable, Good-Paying Jobs With Training and Advancement Opportunities

Urban Manufacturing

The majority of jobs in this sector are in production occupations (52 percent) involved in making goods/products. There also are jobs in the professional/technical occupations (10 percent), business management and operations (11 percent), office and administrative support (11 percent), and transportation and material moving (8 percent).

The large majority of jobs in this sector (75 percent) are middle-wage jobs for workers with less than a college education. Many jobs offer training and advancement opportunities, and they provide good pay and stable, full-time employment. The production and materials-moving occupations are often referred to as blue collar jobs, along with the construction jobs in the construction sector (below).

Construction

Jobs in this sector are primarily in construction occupations (70 percent). There also are jobs in office and administrative support (10 percent) and in business management and operations (8 percent) occupations.

Like urban manufacturing, employment in this sector provides good-paying, middle-wage jobs with opportunities for on-the-job training and advancement. Jobs in the construction sector provide wages at the high end of the middle-wage category. Average wages for construction occupations are also higher than the averages for some of the professional/technical occupations.

The Clean/Green Economy Sector Supports a Range of Types of Jobs

The clean/green economy includes a diversified mix of segments of many industries that offer a range of types of jobs. Jobs in segments involved in manufacturing and construction have occupational profiles similar to those described above. The newer, clean technology segments have occupation profiles more similar to the life science and information sectors described in the first part of this section. The clean/green economy also includes segments of the professional and technical services industries with jobs focused in those occupational groups. In addition, the sector includes recycling and reuse segments with jobs in the transportation and material moving occupations.

Overall, the majority of jobs in this sector are in the middle-wage occupations, and are often defined as green collar and blue collar occupations. They offer good-paying jobs, do not require higher education, and can provide training and advancement opportunities for workers.

Comparison With East Bay Economy Overall

Comparison of the occupational distributions of jobs in the market sectors assessed for West Oakland and the occupational distribution for total employment in the East Bay highlight some differences.

- There are proportionally more, middle-wage jobs in the urban manufacturing, construction, and clean/green economy sectors than in the economy overall (67 percent to 89 percent compared to 27 percent overall). Many of the jobs in this group are green collar and blue collar jobs.
- There are proportionally more higher-wage/higher-education jobs in the life science, information, and clean technology sectors than in the economy overall (60 percent to 70 percent compared to 36 percent overall).

Together, the market sectors assessed for West Oakland provide good jobs for workers with a range of skills and educational attainment.

APPENDIX 1:

BACKGROUND TABLES: OCCUPATIONAL DISTRIBUTIONS FOR INDUSTRIES WITHIN MARKET SECTORS

**TABLE A-1
OCCUPATIONAL DISTRIBUTIONS FOR THE LIFE SCIENCES / BIOTECHNOLOGY SECTOR**

SOC Code Occupation Title	Pharmaceutical and Medicine		Total
	Mfg.	Scientific R&D	
11 Management	12.8%	14.9%	14.4%
13 Business and Financial Operations	8.8%	7.8%	8.1%
15 Computer and Math	5.3%	12.3%	10.5%
17 Architecture and Engineering	3.3%	16.6%	13.0%
19 Life, Physical, and Social Science	18.6%	31.0%	27.7%
21 Community and Social Services		0.4%	0.3%
23 Legal	0.8%	0.6%	0.7%
25 Education, Training, and Library		0.2%	0.1%
27 Arts, Design, Entertainment, Sports, and Media	1.3%	1.0%	1.1%
29 Healthcare Practitioners and Technical	0.3%	1.4%	1.1%
31 Healthcare Support		0.5%	0.4%
33 Protective Service		0.4%	0.3%
35 Food Preparation and Serving-Related			
37 Building and Grounds Cleaning and Maintenance	0.8%	0.3%	0.4%
39 Personal Care and Service			
41 Sales and Related	3.0%	0.4%	1.1%
43 Office and Administrative Support	10.1%	9.4%	9.6%
45 Farming, Fishing, and Forestry		0.1%	0.1%
47 Construction and Extraction		0.1%	0.1%
49 Installation, Maintenance, and Repair	3.0%	1.0%	1.5%
51 Production	30.2%	1.5%	9.1%
53 Transportation and Material Moving	2.0%	0.1%	0.6%
Total	100.0%	100.0%	100.0%

Sources: State of California, Employment Development Department and Hausrath Economics Group

**TABLE A-2
OCCUPATIONAL DISTRIBUTIONS FOR THE CLEAN/GREEN ECONOMY SECTOR**

SOC	Clean Economy
Code Occupation Title	
11 Management	5.7%
13 Business and Financial Operations	5.8%
15 Computer and Math	2.1%
17 Architecture and Engineering	5.7%
19 Life, Physical, and Social Science	2.3%
21 Community and Social Services	1.4%
23 Legal	0.7%
25 Education, Training, and Library	0.4%
27 Arts, Design, Entertainment, Sports, and Media	0.6%
29 Healthcare Practitioners and Technical	1.2%
31 Healthcare Support	0.3%
33 Protective Service	4.5%
35 Food Preparation and Serving-Related	0.4%
37 Building and Grounds Cleaning and Maintenance	0.9%
39 Personal Care and Service	1.2%
41 Sales and Related	3.4%
43 Office and Administrative Support	14.1%
45 Farming, Fishing, and Forestry	0.7%
47 Construction and Extraction	7.2%
49 Installation, Maintenance, and Repair	6.2%
51 Production	15.9%
53 Transportation and Material Moving	19.3%
Total	100.0%

Sources: Brookings Institution, Metropolitan Policy Program, 2011, Sizing the Clean Economy: A National and Regional Green Jobs Assessment.

**TABLE A-3
OCCUPATIONAL DISTRIBUTIONS FOR THE URBAN MANUFACTURING SECTOR - I-80/880 Corridor, Richmond to Union City**

SOC Code Occupation Title	Food & Beverages	Textiles, Apparel, & Leather	Wood Products & Furniture	Paper, Printing, & Related	Chemicals (incl., Pharma.)	Plastics and Rubber; Stone, Clay, Brick, Glass, & Concrete Products	Primary Metal & Fabricated Metal Products	Machinery	Computer & Electronic Products; Electrical Equip., Applicances & Transp.	Misc. Mfg.	Other Mfg.	Total Urban Manufacturing	
		Components	Equip.										
11 Management	3.6%	3.8%	4.9%	6.1%	11.7%	4.8%	6.8%	11.5%	13.2%	7.3%	9.0%	7.7%	7.3%
13 Business and Financial Operations	0.6%	0.9%	0.9%	1.2%	7.3%	1.4%	2.2%	3.3%	7.4%	11.7%	4.1%	11.5%	3.3%
15 Computer and Math	0.1%	0.5%	0.0%	0.7%	4.2%	0.0%	0.6%	2.7%	12.7%	3.9%	1.4%	6.2%	2.5%
17 Architecture and Engineering	0.1%	0.0%	0.4%	0.0%	2.8%	0.8%	2.6%	9.5%	21.4%	22.0%	5.5%	7.7%	5.1%
19 Life, Physical, and Social Science	0.6%	0.1%	0.0%	0.1%	15.7%	0.0%	0.0%	0.0%	0.2%	0.0%	1.0%	5.4%	1.6%
21 Community and Social Services													
23 Legal					0.6%				0.1%		0.1%	0.8%	0.1%
25 Education, Training, and Library													
27 Arts, Design, Entertainment, Sports, and Media	0.2%	2.1%	0.2%	3.3%	1.0%	0.0%	0.0%	0.0%	0.6%	0.4%	1.4%	0.0%	0.7%
29 Healthcare Practitioners and Technical					0.2%								
31 Healthcare Support													
33 Protective Service	0.2%									0.4%			0.0%
35 Food Preparation and Serving-Related	1.4%												0.3%
37 Building and Grounds Cleaning and Maintenance	0.4%	0.6%	0.4%	0.5%	0.6%	0.8%	0.6%	0.4%	0.1%	0.1%	0.2%	0.0%	0.4%
39 Personal Care and Service													
41 Sales and Related	4.8%	2.8%	3.3%	2.0%	3.2%	0.3%	0.0%	4.1%	3.3%	0.0%	3.3%	0.0%	2.5%
43 Office and Administrative Support	7.3%	12.7%	9.9%	16.7%	11.3%	9.5%	12.3%	13.8%	9.6%	9.2%	16.8%	9.2%	11.2%
45 Farming, Fishing, and Forestry	4.4%												0.9%
47 Construction and Extraction	0.1%	0.2%	1.5%			3.4%	1.7%			2.7%		2.3%	0.8%
49 Installation, Maintenance, and Repair	4.4%	0.7%	2.0%	2.4%	3.2%	8.1%	2.8%	3.1%	2.2%	3.8%	2.7%	7.7%	3.5%
51 Production	57.4%	69.0%	67.3%	56.9%	34.7%	44.3%	67.3%	50.4%	27.8%	36.8%	50.9%	38.5%	51.6%
53 Transportation and Material Moving	14.6%	6.5%	9.1%	10.1%	3.6%	26.6%	3.1%	1.2%	1.3%	1.5%	3.6%	3.1%	8.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: Total is based on the mix of manufacturing industries along the I-80-880 Corridor, Richmond to Union City.

Sources: State of California, Employment Development Department and Hausrath Economics Group.

TABLE A-4
OCCUPATIONAL DISTRIBUTIONS FOR THE CONSTRUCTION SECTOR - I-80/880 Corridor, Richmond to Union City

SOC			Heavy & Civil Engineering		
Code Occupation Title	Construction of Buildings	Construction (Infrastructure)	Specialty Trade Contractors	Total Construction	
11 Management	9.0%	7.5%	3.5%	4.9%	
13 Business and Financial Operations	4.3%	4.3%	2.7%	3.2%	
15 Computer and Math	0.2%	0.9%		0.2%	
17 Architecture and Engineering	2.1%	0.9%	0.4%	0.8%	
19 Life, Physical, and Social Science	0.2%	0.3%	0.0%	0.1%	
21 Community and Social Services					
23 Legal					
25 Education, Training, and Library					
27 Arts, Design, Entertainment, Sports, and Media					
29 Healthcare Practitioners and Technical					
31 Healthcare Support					
33 Protective Service					
35 Food Preparation and Serving-Related					
37 Building and Grounds Cleaning and Maintenance	0.5%	0.1%	0.1%	0.2%	
39 Personal Care and Service					
41 Sales and Related	1.5%	1.3%	1.5%	1.5%	
43 Office and Administrative Support	13.8%	9.9%	8.7%	9.7%	
45 Farming, Fishing, and Forestry					
47 Construction and Extraction	67.1%	61.3%	73.3%	70.8%	
49 Installation, Maintenance, and Repair	0.5%	7.5%	6.7%	5.7%	
51 Production	0.3%	1.9%	1.1%	1.0%	
53 Transportation and Material Moving	0.5%	4.3%	2.0%	2.0%	
Total	100.0%	100.0%	100.0%	100.0%	

NOTE: Total is based on the mix of construction businesses along the I-80/880 Corridor, Richmond to Union City.

Sources: State of California, Employment Development Department and Hausrath Economics Group.

**TABLE A-5
OCCUPATIONAL DISTRIBUTIONS FOR THE DIGITAL MEDIA / INFORMATION TECHNOLOGY SECTOR**

SOC Code	Occupation Title	Publishing - Print	Tele-communications Broadcasting	Publishing - Software	Motion Picture, Video, and Sound Recording	Internet Service Providers, Web Portals, and Data Processing	Information - All Other	Subtotal	Total Digital Media / Information Technology	
11	Management	7.8%	4.5%	8.8%	14.5%	19.2%	13.0%	14.1%	17.1%	12.9%
13	Business and Financial Operations	3.9%	7.0%	2.0%	12.6%	8.2%	14.5%	10.6%	9.9%	7.9%
15	Computer and Math	3.5%	12.8%	2.3%	46.4%	2.2%	27.5%	40.7%	17.5%	13.5%
17	Architecture and Engineering		5.3%	0.0%	0.2%					1.0%
19	Life, Physical, and Social Science	1.0%	0.7%	0.9%	2.8%	1.0%			0.6%	0.7%
21	Community and Social Services									
23	Legal				0.7%	0.4%	0.5%	1.0%	0.5%	0.3%
25	Education, Training, and Library							1.0%	0.1%	0.1%
27	Arts, Design, Entertainment, Sports, and Media	29.3%	0.4%	52.7%	6.2%	39.5%	1.0%	10.9%	26.5%	24.5%
29	Healthcare Practitioners and Technical									
31	Healthcare Support									
33	Protective Service									
35	Food Preparation and Serving-Related					3.8%			2.3%	1.4%
37	Building and Grounds Cleaning and Maintenance		0.6%	0.3%		0.3%			0.2%	0.2%
39	Personal Care and Service					6.2%			3.8%	2.3%
41	Sales and Related	14.5%	12.4%	11.4%	6.9%	4.7%	5.7%	9.9%	5.9%	8.6%
43	Office and Administrative Support	22.5%	15.8%	21.1%	9.2%	13.8%	36.3%	11.5%	14.5%	16.3%
45	Farming, Fishing, and Forestry									
47	Construction and Extraction					0.9%			0.5%	0.3%
49	Installation, Maintenance, and Repair	0.4%	40.2%	0.6%						7.3%
51	Production	11.1%				0.3%			0.2%	1.5%
53	Transportation and Material Moving	5.9%	0.3%		0.5%	0.6%	0.5%	0.3%	0.5%	1.1%
Total		100.0%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Sources: State of California, Employment Development Department and Hausrath Economics Group

APPENDIX 2:

**CONTEXT OF EXISTING LAND USE AND
BUSINESS ACTIVITY IN WEST OAKLAND
OPPORTUNITY AREAS**

CONTEXT OF EXISTING LAND USE AND BUSINESS ACTIVITY IN WEST OAKLAND OPPORTUNITY AREAS

This report summarizes existing land use in West Oakland, focusing on amounts of land, land uses, and types of businesses and other activities in each of the four Opportunity Areas under study for the West Oakland Specific Plan. The purpose is to provide context and contribute to the understanding of opportunities and constraints for improvements, new development, and the intensification of activity in West Oakland in the future.

Existing land use patterns are described by parcel-based data from the Alameda County Assessor's Office (as available from the City of Oakland).¹ An overview of overall land use patterns in West Oakland is provided below, followed by sections focusing on land use in each of the four Opportunity Areas.

Land Use in West Oakland Overall

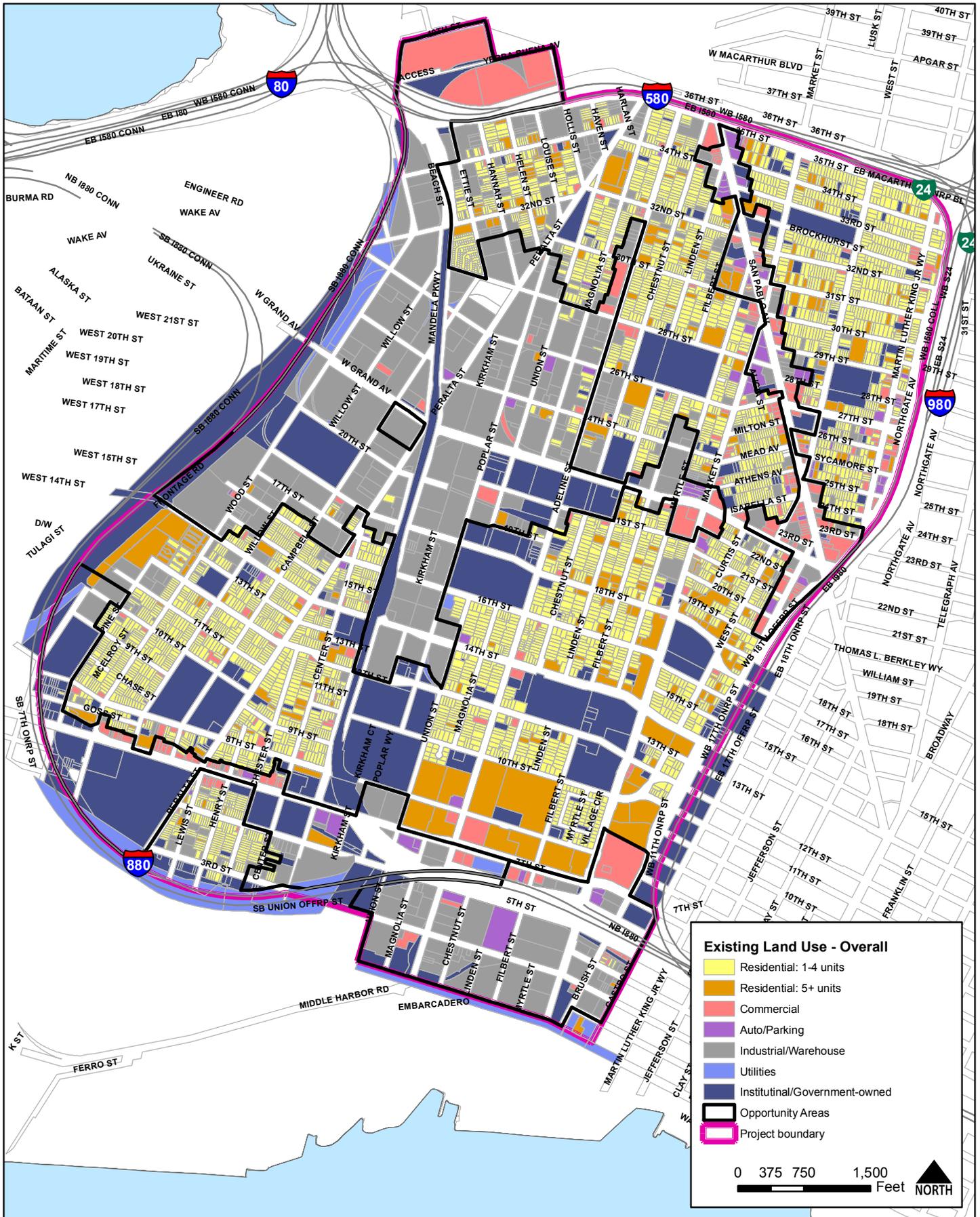
West Oakland is an older urbanized area with a mix of residential, industrial, and commercial land uses. Portions of the area also are owned and used by government agencies, utilities, and institutions. In total, there are approximately 1,900 acres of land subdivided into 6,340 parcels in West Oakland, excluding streets. The overall land use pattern is shown on the map on the next page and summarized in Table 1.²

Residential land uses occupy just under 60 percent of the land in West Oakland (about 1,100 acres), with the area's residential neighborhoods concentrated in the eastern, northern, and southwestern parts of the area. The population of West Oakland includes approximately 25,400 residents and 8,600 households (based on 2005 data presented in Table 2).

Industrial, commercial, and auto/parking land uses occupy about 23 percent of total parcel land area in West Oakland (about 440 acres). Within this group, most of the land area (about 335 acres, or 75 percent) is in industrial use, including light industrial, warehousing, and heavy industrial uses and improvements. The industrial uses are concentrated in the central areas in the vicinity of Mandela Parkway and West Grand Avenue and at the southern end in the vicinity of 3rd Street. Land devoted to commercial uses (about 86 acres) includes retail stores (concentrated at the northern end near Emeryville), eating and drinking places, and service and small office uses. Auto-related and parking uses occupy an additional 20 acres. Commercial and auto-related land uses primarily occur at the northern end near Emeryville, and along San Pablo Avenue, West Grand Avenue (eastern end), Market Street, and 7th Street.

¹ Existing land use patterns in West Oakland are described by data from the Alameda County Assessor's Office, as available from the City of Oakland, Community and Economic Development Agency in 2011. The County Assessor's Office is the recognized source of comprehensive, parcel-based property data. Data are collected and recorded using a standardized methodology, for the primary purpose of property tax assessment. The Assessor's data are parcel-based and provide information on the number of parcels of land and the square feet of parcel land area devoted to uses of various types (residential, industrial, commercial, etc.). The data do not include the square feet of building space that is located on the land in the area.

² The boundaries of West Oakland as defined for this project are shown by the red outline on the map. The boundaries of the four Opportunity Areas also are outlined on the map.



WEST OAKLAND SPECIFIC PLAN

Existing Land Use - Overall
Alameda County Assessor Use Code

**TABLE 1
EXISTING LAND USE IN WEST OAKLAND**

Use	Parcel Count		Parcel Square Feet and Acreages		
	No.	Percent /a/	Sq. Ft.	Acres	Percent /a/
Industrial/Warehouse	639	10.1%	14,593,797	335.0	17.6%
Govt.-owned/Institutional /b/	381	6.0%	13,124,314	301.3	15.8%
Utilities /c/	45	0.7%	1,954,914	44.9	2.4%
Auto-related/Parking /d/	85	1.4%	893,282	20.5	1.1%
Commercial /e/	313	4.9%	3,731,310	85.7	4.5%
Residential	4,873	76.9%	48,576,266	1,115.2	58.6%
N/A /f/	8	-	210,471	4.8	-
TOTAL	6,344	100.0%	83,084,354	1,907.4	100.0%

/a/ Percent of total excluding parcels with incomplete records (N/A).
 /b/ Includes government-owned land such as land owned by Caltrans, BART, Oakland Unified School District, Oakland Housing Authority, City of Oakland (public parks, community centers), and the U.S. Government (Post Office), and land owned by non-profit institutions such as churches.
 /c/ Includes property owned by public utilities such as EBMUD and the railroads.
 /d/ Auto-related uses besides parking include land for repair garages, dealerships, car washes, and service/fuel stations for autos, trucks, and other vehicles.
 /e/ Includes land for retail, restaurant, office, hotel/motel, theater, service, and other commercial uses, excluding auto-related commercial shown separately.
 /f/ Records incomplete; use not identified.

Source: Alameda County Assessor; City of Oakland CEDA; Hausrath Economics Group.

**TABLE 2
EMPLOYMENT AND POPULATION IN WEST OAKLAND**

	2000 /a/	2005 /b/
Employment	11,400	11,800
Households	8,040	8,600
Population	23,400	25,400

/a/ 2000 Census and ABAG *Projections 2009*, as summarized for Traffic Analysis Zones (TAZs) in West Oakland. The TAZ areas approximate the West Oakland project area, and cover a slightly smaller area.
 /b/ ABAG *Projections 2009*, as allocated to TAZs in West Oakland by City of Oakland and Alameda County Transportation Commission.

Source: Hausrath Economics Group based on sources identified above.

In addition, relatively large amounts of land in West Oakland are devoted to government agency ownership/use, utilities, and institutional uses, about 18 percent, or 345 acres. This group includes land owned by Caltrans, the railroads, the U.S. Postal Service, BART, EBMUD, the school district, the Housing Authority, and the City of Oakland (public parks and community centers).

Overall, estimated employment in West Oakland is about 11,800 (based on year 2005 data presented in Table 2). Most of the employment is located in the central industrial areas centered around Mandela Parkway and West Grand Avenue and extending north to I-580, in the industrial areas around 3rd Street at the southern end, and in the Post Office and nearby areas also at the southern end.

Land Use and Business Activity in Opportunity Areas

Four Opportunity Areas have been identified as including vacant and underutilized properties where new investment and development may be possible. The Opportunity Areas are older industrial and commercial areas of West Oakland. They include properties with active businesses and other uses. They also include properties with older industrial and commercial structures and improvements that are functionally obsolete and do not meet modern standards and market conditions. In addition, they include vacant properties and parcels no longer needed for transportation purposes or rights-of-way.

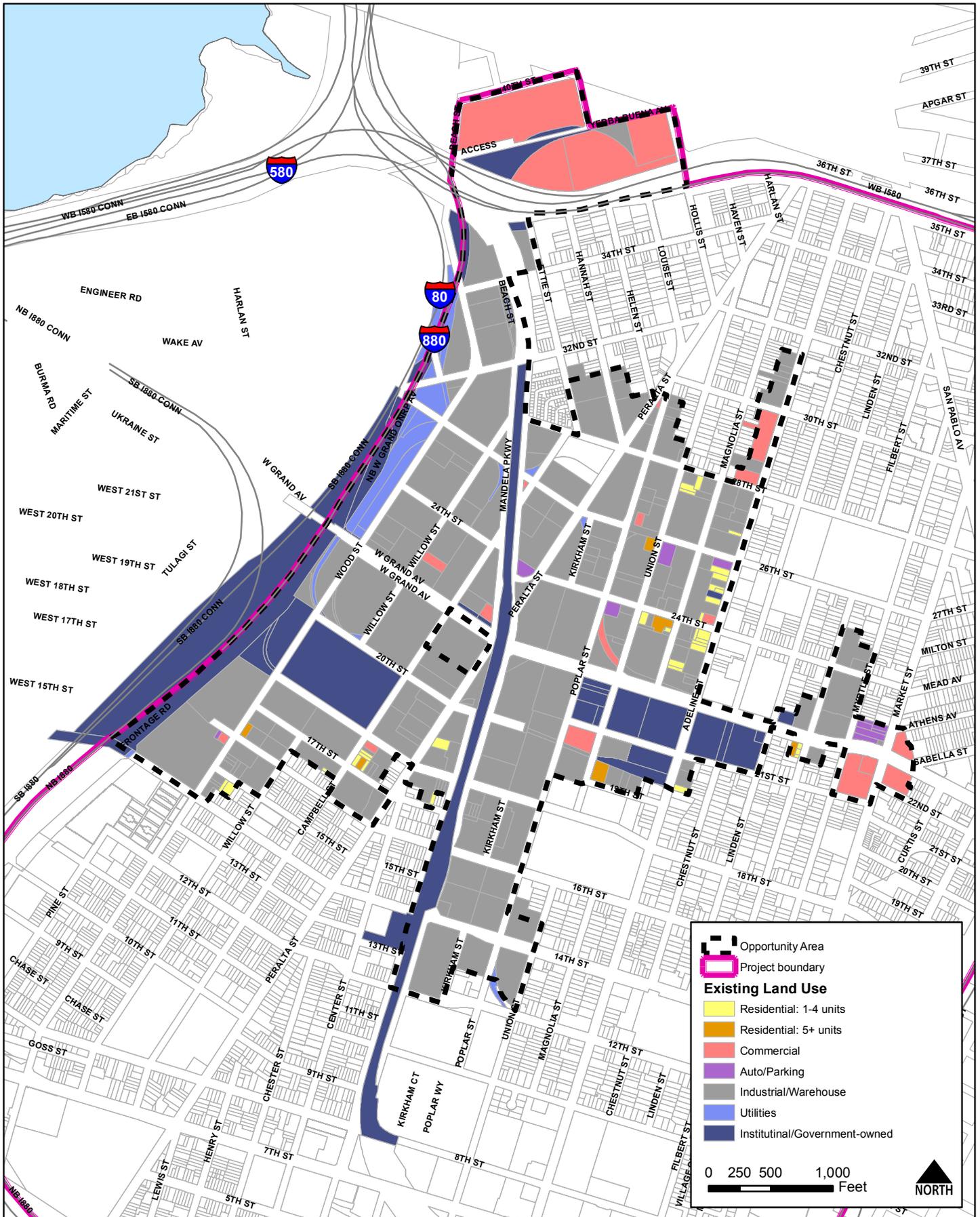
The land use context for each Opportunity Area is described below.

Mandela/West Grand Opportunity Area

The Mandela/West Grand Opportunity Area is primarily an older industrial area centered around the intersection of Mandela Parkway and West Grand Avenue. The area includes a total of 15.3 million square feet of parcel land area, or approximately 350 acres. The map on the next page and the data in Table 3 describe current land use.

The majority of the land in this area, over 200 acres, remains in industrial use (about 76 percent of parcel land area excluding government-owned and utility property, or 59 percent overall). The area historically was in general industrial, manufacturing, and transportation use. Over time, older, heavier industries, particularly the larger manufacturing industries, have left the area, and properties with older structures and facilities remain, some of which are functionally obsolete and/or do not meet current standards and market conditions. Throughout the area, many industrial properties are being actively used, while others are underutilized or vacant.

The area currently includes a mix of older and newer types of business activities, as highlighted by the examples of types of businesses in the Mandela/West Grand Area identified in Table 4. There are a number of businesses involved in construction, building materials, and related activities, that value the area's relative affordability and its central location with proximity to business and residential areas in the Inner East Bay. These businesses use industrial, yard, and office/administrative space. There also are smaller, custom manufacturing and related



City of Oakland, CEDA, Strategic Planning
September 2011



WEST OAKLAND SPECIFIC PLAN

Existing Land Use - Mandela Parkway/Grand Avenue/Market Street Opportunity Area

Alameda County Assessor Use Code

**TABLE 3
EXISTING LAND USE IN MANDELA/WEST GRAND OPPORTUNITY AREA**

Use	Parcel Count		Parcel Square Feet and Acreages		
	No.	Percent /a/	Sq. Ft.	Acres	Percent /a/
Industrial/Warehouse	251	58.4%	8,965,779	205.8	59.1%
Govt.-owned/Utilities/Institutional /b/	64	14.9%	3,878,362	89.1	25.6%
Auto-related/Parking /c/	11	2.5%	97,972	2.2	0.6%
Commercial /d/	30	7.0%	1,522,911	35.0	10.0%
Residential	74	17.2%	713,514	16.4	4.7%
N/A /e/	<u>3</u>	<u>-</u>	<u>106,616</u>	<u>2.4</u>	<u>-</u>
TOTAL	433	100.0%	15,285,154	350.9	100.0%

/a/ Percent of total excluding parcels with incomplete records (N/A).
 /b/ Includes government-owned land such as land owned by Caltrans, BART, the City of Oakland, and the U.S. Government; land owned by non-profit institutions such as churches; and land owned by utilities such as EBMUD and the railroads.
 /c/ Auto-related uses besides parking include land for repair garages, dealerships, car washes, and service/fuel stations for autos, trucks, and other vehicles.
 /d/ Includes land for retail, restaurant, office, hotel/motel, theater, service, and other commercial uses, excluding auto-related commercial shown separately.
 /e/ Records incomplete; use not identified.

Source: Alameda County Assessor; City of Oakland CEDA; Hausrath Economics Group.

TABLE 4
EXAMPLES OF TYPES OF BUSINESSES IN
MANDELA/WEST GRAND OPPORTUNITY AREA

- ◆ Construction, Building Materials, and Related
 - Contractors
 - Construction materials, equipment, and hardware
 - Carpentry and cabinet makers
 - Lumber

- ◆ Transportation and Shipping
 - Trucking and transportation
 - Harbor-related services
 - Import and Export

- ◆ Environmental Services and Recycling

- ◆ Manufacturing and Related
 - Metal, plastics, and other
 - Clothing and fashion
 - Printing
 - Food production and wholesale

- ◆ Arts/Media/Graphics
 - Arts and creative
 - Industrial arts
 - Digital arts and media
 - Film, photo, and video services

- ◆ Professionals and Other Services
 - Architecture, interior and landscape design
 - Professional services
 - Consulting
 - Communications and IT

Source: West Oakland Works Business Directory; Hausrath Economics Group.

businesses, including those involved with metals/plastics, printing, food products, and clothing/fashion. The area also has attracted numerous arts and creative businesses, including larger industrial arts, as well as smaller arts manufacturing, digital arts and media, and film/photo/video services. These businesses are attracted by the relatively affordable space in industrial buildings and the availability of spaces for heavier, industrial arts activities. There also are small, professional service and related businesses, typically in the older industrial buildings, some with office, light industrial, and yard space. Examples include architects, landscape designers, consultants, and communications businesses.

In addition, the area also includes businesses involved in trucking, maritime port support activities, warehouse, and import/export. Some located in this area because of its central

location and its proximity to the freeway system and the Port of Oakland. While large parts of West Oakland historically had been in general industrial and transportation use, the relocation of the I-880 freeway further to the west has created a new boundary between the heavier industrial and transportation uses (now desired outside the freeway) and a mix of lighter industrial, custom manufacturing, and other business uses desired within West Oakland. As a result, the establishment or expansion of truck-intensive uses are no longer allowed in the area. There also are several recycling facilities in this opportunity area, although current land use policy no longer allows new or expanded recycling uses. The challenge will be to find alternative locations for truck-intensive, port-related, and recycling uses outside of West Oakland. Alternative locations for these heavier industrial uses will free up land for a mix of lighter industrial and other business uses in the area.

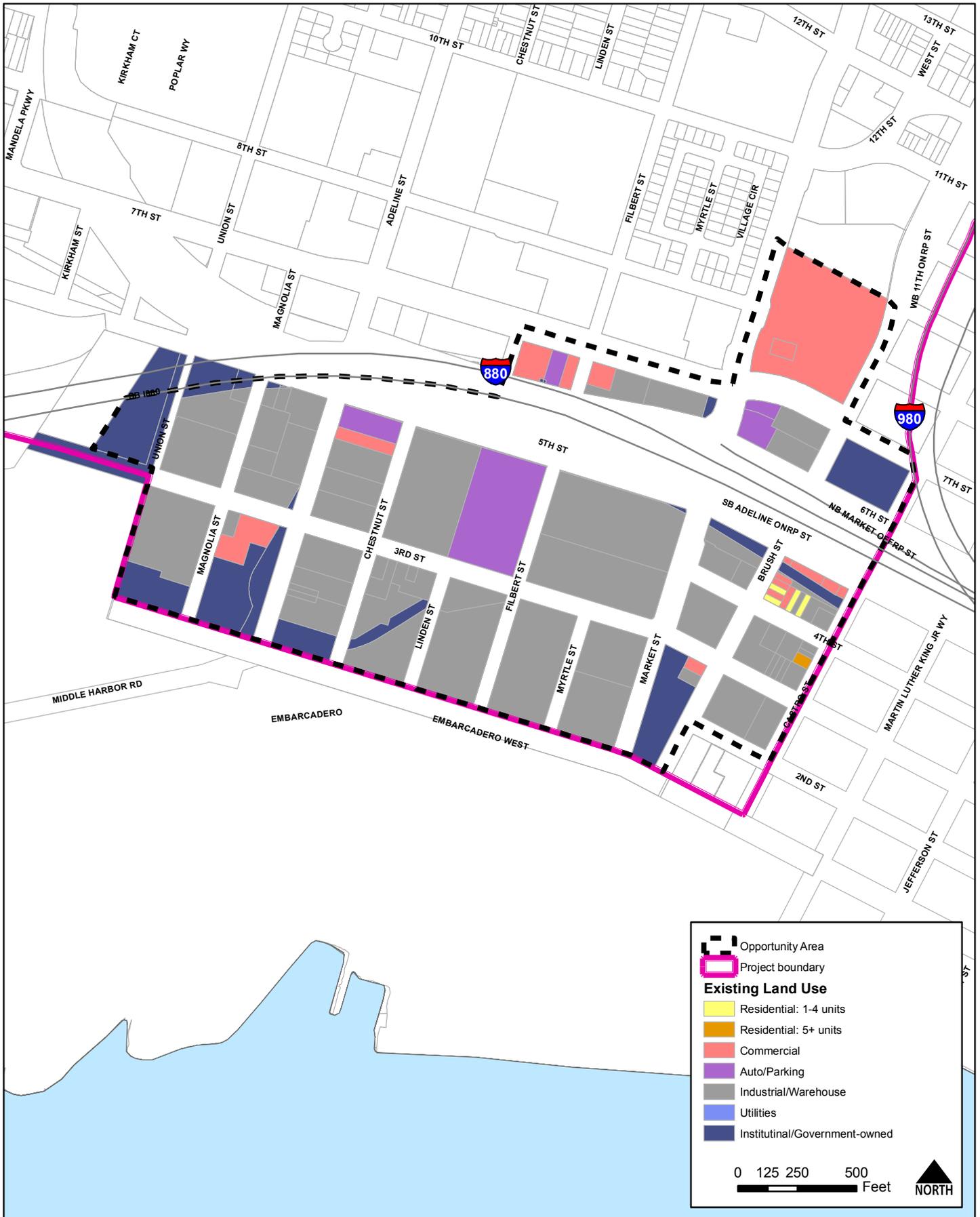
3rd Street Opportunity Area

The 3rd Street Opportunity Area is primarily an industrial area, located in proximity to Downtown Oakland, the Port of Oakland, West Oakland, and the regional freeway system. The area includes a total of 2.8 million square feet of parcel land area, or approximately 63 acres. Most of this area is located to the south and “outside” of the I-880 freeway from West Oakland. A small section is included to the north of the freeway “within” West Oakland. The 980 freeway borders the northern part of the area as well. The map on the next page and the data in Table 5 describe current land use.

The majority of the land in the area, about 40 acres, or 62 percent, is industrial, and an additional five acres, or seven percent, is in truck/auto sales and service use. Industrial activities are focused between the I-880 freeway and Embarcadero which borders the Port of Oakland. Industrial businesses in the area include food and beverage production/manufacturing, transportation uses and services, and construction-related uses. There is heavy truck traffic through the area as 3rd Street is a designated truck route for large trucks traveling between the Port and the I-880 freeway.

The area also includes attractive, older warehouse buildings that have been converted to light industrial and small office/business uses. Examples of businesses in these buildings include architects and designers, insurance and financial services, import/export businesses, communications, computer services, consulting, art studios, publishing and printing, and photo/audio services (see Table 6).

In addition, the area includes commercial land use representing about eight acres and 12 percent of the area. Most of that land is the Jack London Gateway Shopping Center parcel along Market Street just north of 7th Street and on the West Oakland side of the I-880 freeway. There also is government-owned property in the area, including a vacant parcel owned by Caltrans adjacent to the freeway and properties owned by the railroads, BART, and the City of Oakland.



City of Oakland, CEDA, Strategic Planning
September 2011



WEST OAKLAND SPECIFIC PLAN

Existing Land Use - 3rd Street to 7th Street Opportunity Area
Alameda County Assessor Use Code

TABLE 5
EXISTING LAND USE IN 3rd STREET OPPORTUNITY AREA

Use	Parcel Count		Parcel Square Feet and Acreages		
	No.	Percent /a/	Sq. Ft.	Acres	Percent /a/
Industrial/Warehouse	58	52.7%	1,706,097	39.2	61.8%
Govt.-owned/Utilities/Institutional /b/	22	20.0%	505,919	11.6	18.3%
Auto-related/Parking /c/	5	4.5%	197,837	4.5	7.2%
Commercial /d/	17	15.5%	329,216	7.6	11.9%
Residential	8	7.3%	22,190	0.5	0.8%
N/A /e/	-	-	-	-	-
TOTAL	110	100.0%	2,761,259	63.4	100.0%

/a/ Percent of total excluding parcels with incomplete records (N/A).

/b/ In this area, includes government-owned and utility-owned land including land owned by Caltrans, BART, the City of Oakland, and the railroads.

/c/ Auto-related uses besides parking include land for repair garages, dealerships, car washes, and service/fuel stations for autos, trucks, and other vehicles.

/d/ Includes land for retail, restaurant, office, hotel/motel, theater, service, and other commercial uses, excluding auto-related commercial shown separately.

/e/ Records incomplete; use not identified.

Source: Alameda County Assessor; City of Oakland CEDA; Hausrath Economics Group.

TABLE 6
EXAMPLES OF TYPES OF BUSINESSES IN
3rd STREET OPPORTUNITY AREA

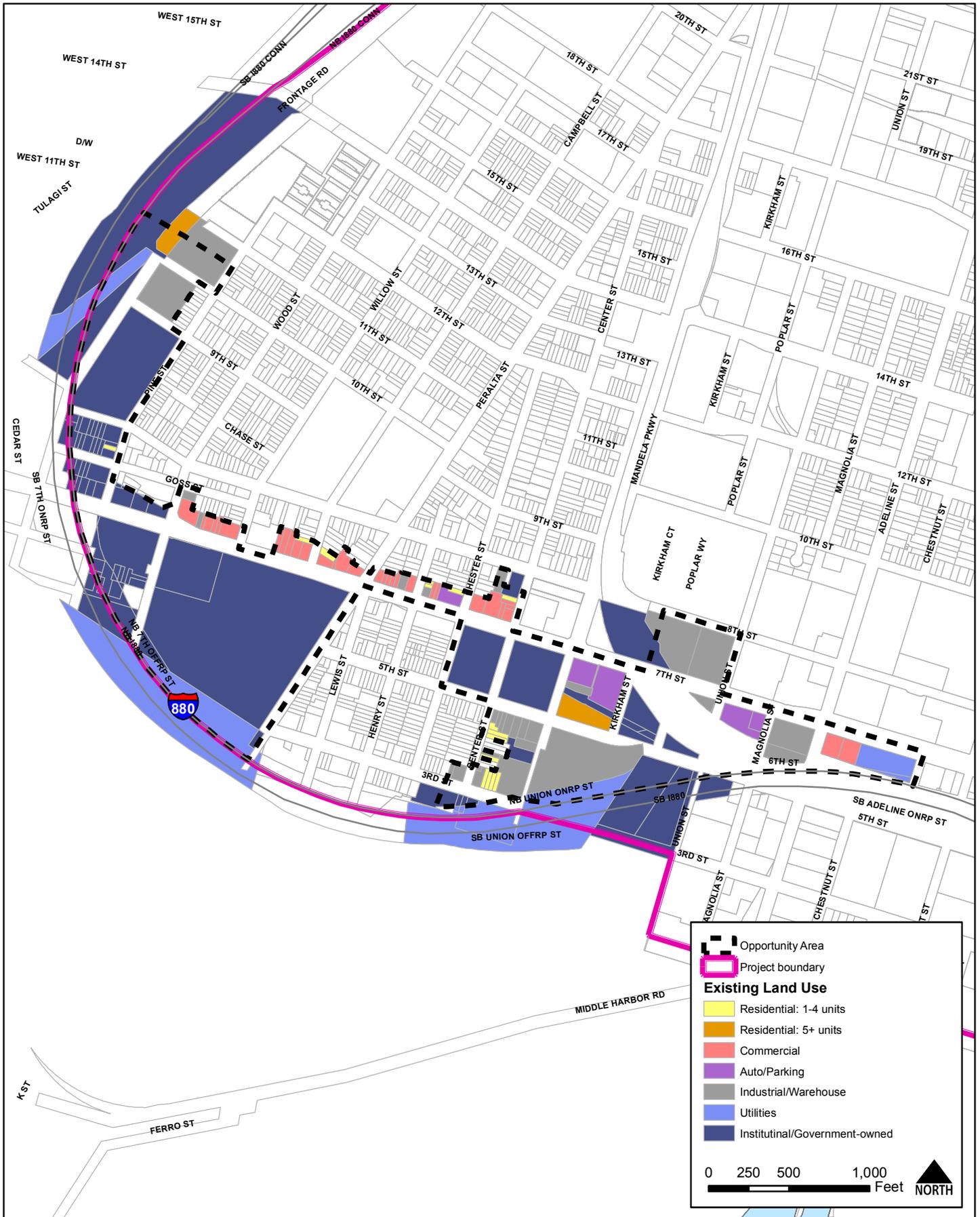
- ◆ Food/Beverage Production and Wholesale
 - Bakery
 - Brewery
- ◆ Other Custom Manufacturing
- ◆ Transportation/Shipping/Truck Services and Sales
- ◆ Contractors and Other Construction-related
- ◆ Architecture/Professionals/Other Services
 - Architecture and design
 - Insurance, financial, and real estate
 - Professional and consulting
 - Import/Export
 - Communications/computer services
- ◆ Arts/Media/Graphics
 - Studios and gallery
 - Publications/printing
 - Film, photo, audio

Source: West Oakland Works Business Directory; Hausrath Economics Group.

BART/7th Street/Pine Street Opportunity Area

This opportunity area includes sites in the vicinity of the West Oakland BART Station, properties along the 7th Street corridor, and sites along Pine Street between Pine and the freeway Frontage Road. In total the area includes about 5.0 million square feet of land area, or 115 acres. The map on the next page and the data in Table 7 describe current land use. Overall, the majority of land in this area, 88 acres and 78 percent, is owned by government agencies and utilities, including BART, Caltrans, the railroads, and the U.S. Government.

The eastern end of this area includes the BART station, parking lots and auto-related uses, a number of vacant sites including several left over from reconfiguring the I-880 freeway and freeway ramps, and industrial properties, including that of the Crucible (education and industrial arts). Moving west along 7th Street are remnants of the former 7th Street commercial corridor, primarily on the north side of the street, where there are commercial storefronts and several vacant parcels. There are some eating and drinking places there. The BART line is elevated along 7th Street and the large Post Office mail sorting facility is on the south side. To the north along Pine Street and Frontage Road are state-owned sites cleared for the freeway re-routing, and



WEST OAKLAND SPECIFIC PLAN

Existing Land Use - West Oakland BART Station/Pine Street Opportunity Area

Alameda County Assessor Use Code

**TABLE 7
EXISTING LAND USE IN BART/7th STREET/PINE STREET OPPORTUNITY AREA**

Use	Parcel Count		Parcel Square Feet and Acreages		
	No.	Percent /a/	Sq. Ft.	Acres	Percent /a/
Industrial/Warehouse	29	17.0%	688,261	15.8	14.0%
Govt.-owned/Utilities/Institutional /b/	89	52.1%	3,840,023	88.2	77.9%
Auto-related/Parking /c/	5	2.9%	114,525	2.6	2.3%
Commercial /d/	31	18.1%	174,888	4.0	3.5%
Residential	17	9.9%	114,512	2.6	2.3%
N/A /e/	<u>2</u>	<u>-</u>	<u>90,805</u>	<u>2.1</u>	<u>-</u>
TOTAL	173	100.0%	5,023,014	115.3	100.0%

/a/ Percent of total excluding parcels with incomplete records (N/A).

/b/ Includes government-owned land such as land owned by Caltrans, BART, the City of Oakland, and the U.S. Government (Post Office); land owned by non-profit institutions such as churches; and land owned by utilities such as EBMUD and the railroads.

/c/ Auto-related uses besides parking include land for repair garages, dealerships, car washes, and service/fuel stations for autos, trucks, and other vehicles.

/d/ Includes land for retail, restaurant, office, hotel/motel, theater, service, and other commercial uses, excluding auto-related commercial shown separately.

/e/ Records incomplete; use not identified.

Source: Alameda County Assessor; City of Oakland CEDA; Hausrath Economics Group.

older industrial sites that include recycling, industrial arts activities, and other uses. Examples of the types of businesses and other activities in the area are shown in Table 8.

**TABLE 8
TYPES OF BUSINESSES AND OTHER ACTIVITIES IN
BART/7th STREET/PINE STREET OPPORTUNITY AREA**

- ◆ Auto Services, Repair, and Parking
- ◆ Environmental Services/Recycling
- ◆ Custom Manufacturing and Wholesale
- ◆ Industrial Arts
- ◆ Post Office Mail Sorting Facility
- ◆ Eating and Drinking

Source: West Oakland Works Business Directory; Hausrath Economics Group.

San Pablo Opportunity Area

This opportunity area includes properties in the vicinity of West Grand Avenue and San Pablo Avenue, and properties along San Pablo Avenue north to I-580. San Pablo Avenue is an older commercial corridor. This stretch of San Pablo Avenue is not well used and includes a number of vacant and underutilized properties. The area includes a total of 1.9 million square feet of land area, or approximately 44 acres. The map on the next page and the data in Table 9 describe current land use.

**TABLE 9
EXISTING LAND USE IN SAN PABLO OPPORTUNITY AREA**

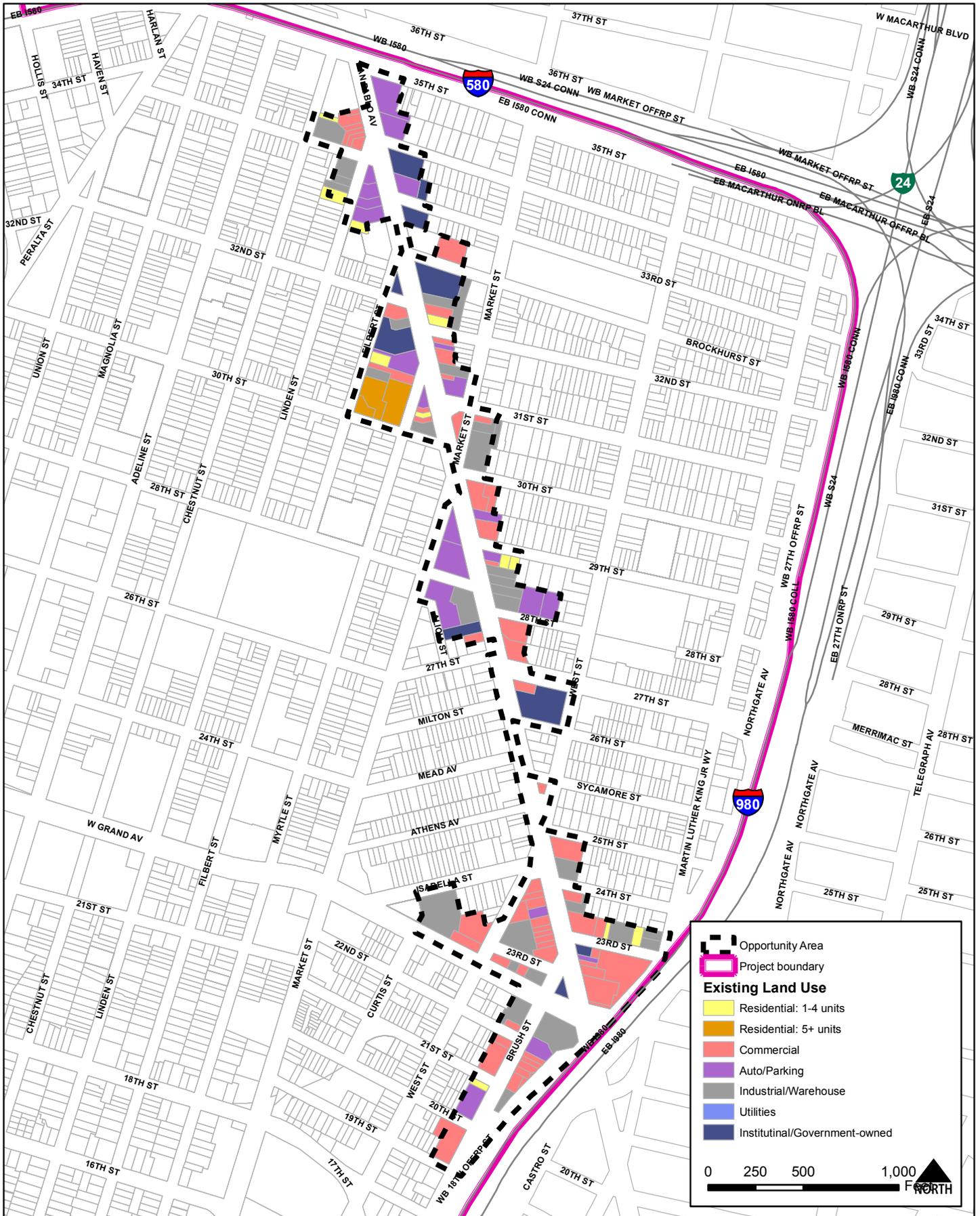
Use	Parcel Count		Parcel Square Feet and Acreages		
	No.	Percent /a/	Sq. Ft.	Acres	Percent /a/
Industrial/Warehouse	28	17.0%	329,579	7.6	17.1%
Govt.-owned/Utilities/Institutional /b/	9	5.4%	155,049	3.5	8.1%
Auto-related/Parking /c/	22	13.3%	246,975	5.7	12.9%
Commercial /d/	61	37.0%	415,668	9.5	21.6%
Residential	45	27.3%	774,154	17.8	40.3%
N/A /e/	2	-	8,070	0.2	-
TOTAL	167	100.0%	1,929,495	44.3	100.0%

/a/ Percent of total excluding parcels with incomplete records (N/A).
 /b/ Includes government-owned land such as land owned by Caltrans, BART, and the City of Oakland, and land owned by non-profit institutions such as churches.
 /c/ Auto-related uses besides parking include land for repair garages, dealerships, car washes, and service/fuel stations for autos, trucks, and other vehicles.
 /d/ Includes land for retail, restaurant, office, hotel/motel, theater, service, and other commercial uses, excluding auto-related commercial shown separately.
 /e/ Records incomplete; use not identified.

Source: Alameda County Assessor; City of Oakland CEDA; Hausrath Economics Group.

The largest share of land in the area is in residential use, approximately 18 acres, or 40 percent. The remaining 60 percent of the land is in a mix of non-residential land uses, including commercial (9.5 acres), auto-related uses (about 6 acres), industrial/warehouse land/facilities (8 acres), and institutional uses (3.5 acres).

In terms of types of businesses and other activities, there are a number of auto-related businesses in the area including those providing auto services, repair, and fuel. Other commercial space in the area includes several health and social service organizations and eating and drinking places, as well as several vacant storefronts and vacant sites. There also are arts and photography



establishments, possibly in residential space and/or commercial space. Land shown as industrial use in this area includes smaller warehouse space, some occupied by contractors and construction-related business activities, a large facility offering self-storage and packing/moving materials, hauling services, and other activities. The institutional/government-owned properties in this area are used by churches and religious organizations. There also are a number of properties owned by the Society of St. Vincent de Paul of Alameda County that are identified as commercial land use in the data. The types of businesses and other activities in the area are summarized in Table 10.

TABLE 10 TYPES OF BUSINESSES AND OTHER ACTIVITIES IN SAN PABLO OPPORTUNITY AREA
<ul style="list-style-type: none">◆ Auto Services, Repair, and Fuel◆ Health and Social Services◆ Churches and Religious Organizations◆ Arts and Photography◆ Contractors and Construction-related◆ Storage and Hauling◆ Eating and Drinking
Source: West Oakland Works Business Directory; Hausrath Economics Group.